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# THE INDUCTIVE GEOGRAPHY.



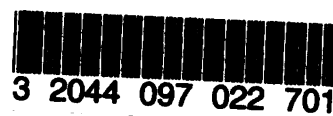
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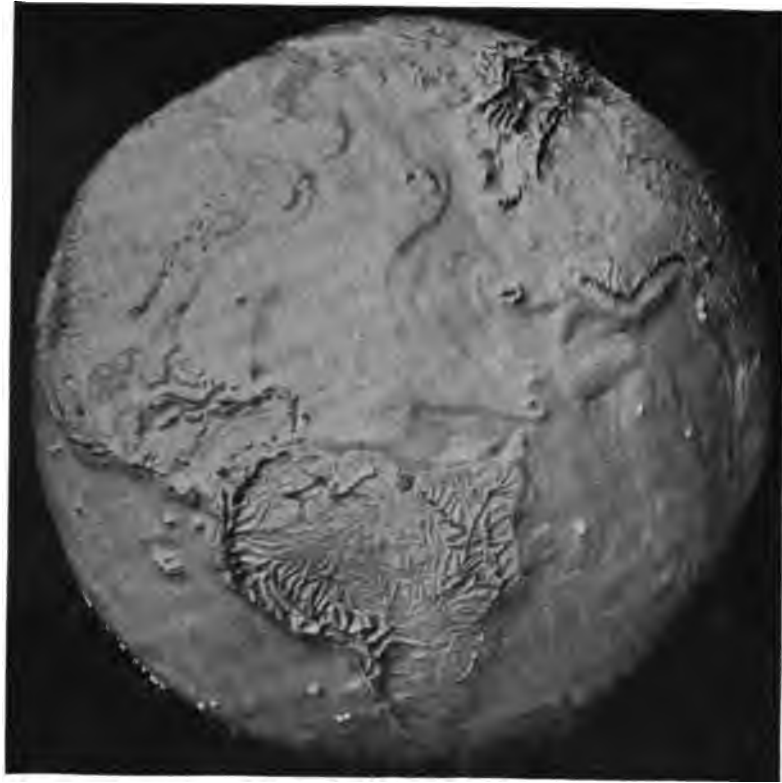


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PHOTOGRAPHS OF JONES' MODEL.

# THE INDUCTIVE GEOGRAPHY

BY

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## PREFACE.

THE aim in geography teaching should be to give the pupil knowledge of the earth as it ministers to human life.

Geography is not a distinct science; in its three great divisions, mathematical, physical, and political, it draws from the sciences of astronomy, geology, biology, and history. There seems to be no limit to its field; it may include much or little from these great departments of knowledge, according to the tastes and preferences of instructors.

The problems confronting the author of a text-book in geography are mainly three: first, the matter to be included; second, the order of arrangement; third, the method of treatment.

In the preparation of *The Inductive Geography*, these problems have been carefully considered.

1. There has been no attempt to exhaust the field of locative geography, as did the text-books of a few years ago. Recent experiences have taught us that in following the details of current events and of political movements, we must study the peculiar locative geography of the movement, and that certain geographical experiences and a knowledge of the important features of the earth are a sufficient basis for this study. Neither has there been a desire to enter into an elaborate explanation of the process through which the world was made, since we feel that the solution of the question can safely be left to Geology and Genesis.

The aim has been to present sufficient material to acquaint the pupil with the great forces that are operating upon the earth, the modifications that are being wrought in its structure and conditions, and the influences of these upon the life and activities of mankind.

The important surface and coast features of the globe are presented as illustrations of the definitions and discussions in the introductory pages.



2. While geography is largely an information subject, there is a logical sequence in its subject matter; location, outline, and surface conditions are the factors of climate; all of these have their influence upon life, from which follow in order occupations, products, and commerce. This logical order of study is set forth in detail in the outline on the following page.

3. By a proper arrangement of geographical knowledge, much of it readily lends itself to thinking processes. The authors have endeavored to keep this logical arrangement before the pupil, and to lead him by questions to supply from his own thinking much knowledge that he gets second hand from most text-books.

The authors and publishers make grateful acknowledgment to those who have assisted in the preparation of the subject matter and to Thomas Jones, maker of Jones' Model of the World; Linwood O. Towne, Teacher of Science and Physiography, High School, Haverhill, Mass.; McMillan & Co., Orange Judd Co., Westinghouse Electric Co., Rand Drill Co., J. B. Lippincott Co., Perry Picture Co., of Boston, Mass., and the Arlington Mills of Lawrence, Mass., for the use of illustrative matter.

With the hope that this book may be truly helpful to teachers and pupils in acquiring valuable knowledge, it is respectfully submitted by

THE AUTHORS.

#### SUGGESTIONS.

The following plan of study will be found most helpful:

1. The *study* of the *Introduction* to Latitude and Longitude (page 29), and such parts of Climate and Life as are within the scope of the children's minds. During this study the pupils will become familiar with the use of the globe and maps.

The maps of the hemispheres have been purposely omitted that the use of the globe may be made more prominent.

2. The *study* of the *continents* as *wholes*.

3. The *study* of the remaining portion of the *Introduction* and the *continents* and *divisions* in detail.

4. A general topical review.

## GEOGRAPHY OUTLINE.

FOR THE STUDY OF A CONTINENT OR DIVISION.

- I. LOCATION.
  - I. *Mathematical* (Latitude and Longitude of Isolated Divisions).
  - II. *Relative Position*.
  - III. *Size* (by Comparison).
- II. OUTLINE AND BOUNDARY.

Make Outline Map. Develop from Sketched Map.

  - I. Coast.
    1. Waters (Seas, Gulfs, etc.).
    2. Lands (Islands, Capes, etc.).
  - II. Border Mountains, Rivers, Lakes.
- III. SURFACE.

Mold Relief in Sand. Make Permanent Relief Models.

  - I. *General Surface*: Position of Highlands, Lowlands, Slopes, etc.  
*Draw Surface Map*.
  - II. *Specific*.
    1. Mountains.
    2. Rivers and Lakes.
    3. *Draw Mountains, Rivers, and Lakes in the Outline Map*.
    4. Soil and Forestry. Make Forestry Map.
    5. Miscellaneous Features. Collect Pictures, and make Charts.
- IV. CLIMATE.
  - I. *Heat* (Influenced by Latitude, Elevation, Slopes, Winds, Seas, etc.)
  - II. *Moisture* (Influenced by Winds, Barriers).
  - III. *Healthfulness* (Influenced by I. and II.).
  - IV. *Make Map* showing Climate and Causes.
- V. POPULATION.
  - I. *Density*: Cities and Towns. Collect Pictures, and mount on Charts. Special Study of Important Cities.
  - II. *Character of People* as to Industry, Education, Religion.
  - III. *Government*.
- VI. OCCUPATIONS and PRODUCTIONS, as influenced by all of the above features.

*Make Map of Products*.

  - I. *Natural*.

*Make Collections of Specimens*.

    1. Animal.
    2. Vegetable.
    3. Mineral.
  - II. *Manufactured*.

*Collect Manufactured Articles and mount on Charts*.
- VII. COMMERCE.

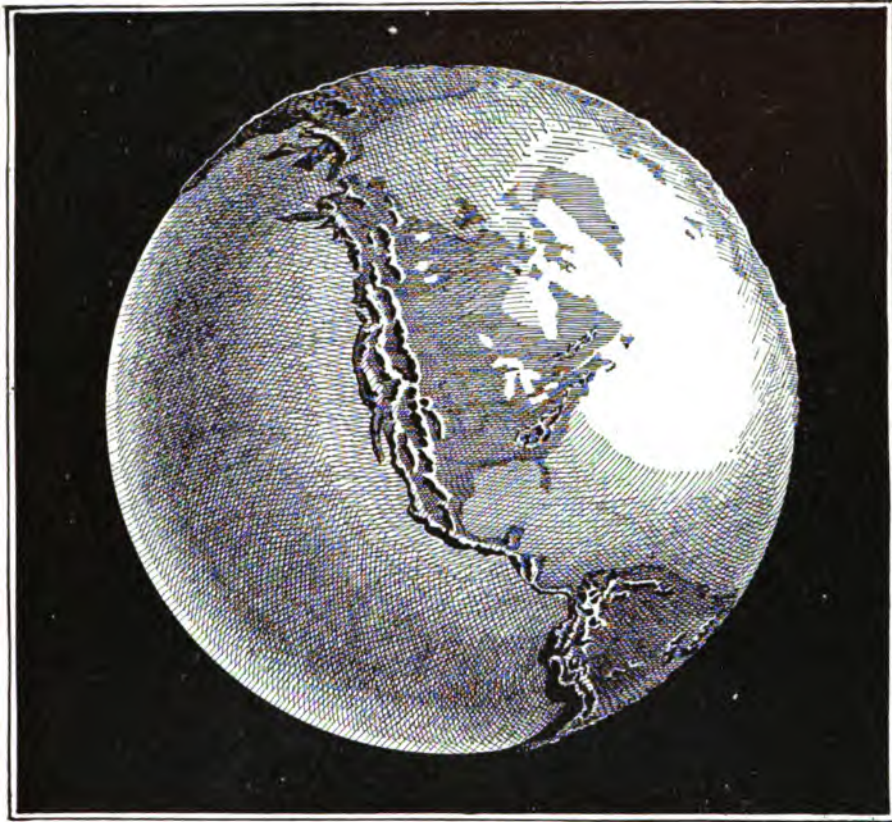
*Class*: Domestic, Foreign.

  1. Exports or Shipments.—What?—Whither?
  2. Imports or Receipts.—What?—Whence?
  - II. *Means*.
    1. Railroads, Canals, Steamship Lines, Rivers, Caravans.
  - III. *Make Commercial Map*.

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## THE INDUCTIVE GEOGRAPHY.



THE EARTH IN SPACE.

### THE EARTH.

A SPHERE is a body having a curved surface, every part of which is equally distant from a point within, called the center. Give examples of spheres and spherical bodies.

Hemi means half. What is a HEMISPHERE?

THE EARTH upon which we live is a great globe, or sphere.

A GLOBE, upon which land and water forms are drawn, is used to represent the earth.

The earth moves through space around the sun, from which it receives heat and light.

There are eight such spheres, called planets, which move around the sun. They are Mercury, Venus, Earth, Mars, Jupiter, Saturn,

Uranus, and Neptune. Between Mars and Jupiter is a group of bodies, called The Asteroids.

THE SOLAR SYSTEM is the sun and the planets which revolve around it.



THE SOLAR SYSTEM.  
(Relative Size and Distance.)

THE UNIVERSE comprises many such systems, whose suns are the stars which we see at night. Many of these stars are known to be larger than our sun. They appear small because they are so far away.

## GEOGRAPHY.

GEOGRAPHY is a description of the earth as our home.

MATHEMATICAL, or ASTRONOMICAL GEOGRAPHY treats of the form, measurements, and motions of the earth.

PHYSICAL GEOGRAPHY treats of the surface of the earth and the forces which operate upon it and modify it.

POLITICAL GEOGRAPHY treats of the divisions of the earth's surface as made by man, and the condition of the people as to government, intelligence, industries, and trade.

Political Geography is the outgrowth of physical conditions, many of which are consequent upon mathematical or astronomical conditions.

## THE SEA AND THE LAND.

We live upon the SURFACE, or outside, of the earth.

About three-fourths of the surface of the earth is covered with water, which taken together is called THE SEA.

The parts of the earth's surface which are above the water level are together called THE LAND.

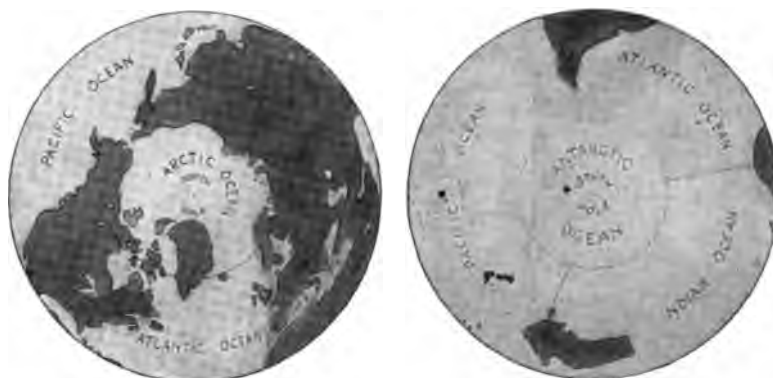
The line that marks the reach of the water upon the surface of the earth is called the COAST LINE. It is the boundary between the sea and the land, and is constantly changing.

The Sea has five great divisions, called OCEANS. Their names are Pacific, Atlantic, Arctic, Antarctic, and Indian. These oceans are partly separated from each other by land masses, except that the boundary of the Antarctic Ocean is an imaginary line. (See Antarctic Circle.)

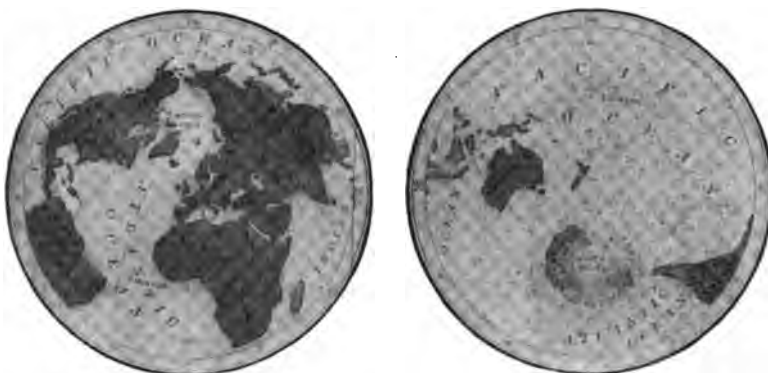
Find each ocean upon the globe and upon the globe pictures.

The Land comprises six large divisions, called CONTINENTS, or GRAND DIVISIONS, and many smaller divisions, called ISLANDS. The

names of the continents are North America, South America, Europe, Asia, Africa, and Australia. The continents of Europe and Asia are by some geographers treated as a single continent under the name of Eurasia. There is supposed to be a continent in the Antarctic Ocean, called the Antarctic Continent; but there is very little known concerning it.



NORTHERN AND SOUTHERN HEMISPHERES.



LAND AND WATER HEMISPHERES.

Find each continent upon the globe and upon the globe pictures.  
Upon which continent do we live?

AN ISLAND is a body of land smaller than a continent, separated from all other land by water. Find upon the globe and upon the globe pictures the following large islands: Greenland, Iceland, Newfoundland, Cuba, Great Britain, Ireland, Madagascar, Japan Islands, Philippine Islands, New Zealand, Borneo, Hawaiian Islands. Near what continent and in what ocean is each?



### THE REVOLVING EARTH.

A ball thrown whirling into the air, or a top spinning, revolves about a line passing through its center. This line is the **AXIS**.

The whirling ball in the air is an excellent illustration of the earth in space. Like the ball, the earth in its journey around the sun continues to revolve about its axis. In this revolution the parts of the earth are turned alternately toward the sun and away from it. When



our part of the earth is turned toward the sun, what do we have? When it is turned away from the sun, what do we have? How often does the earth make a complete revolution on its axis? What does it cause?

### DIRECTIONS ON THE EARTH.

The axis upon which a body revolves may be represented by a line extending through its center and meeting the surface at two points, called **POLES**.

The poles of the earth are called the **NORTH POLE** and the **SOUTH POLE**. Find these poles upon the globe and upon the globe pictures.



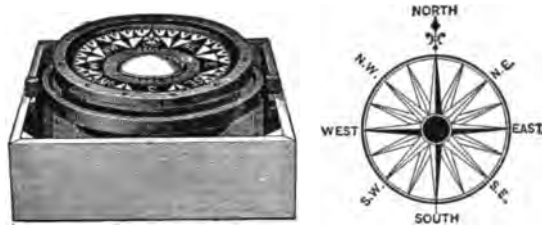
Point toward the North Pole of the earth from where you stand. Point toward the South Pole. When you point toward the North Pole, you point **NORTH**. When you point toward the South Pole, you point **SOUTH**. When you stand with face toward the North, your right hand is toward the **EAST** and your left hand is toward the **WEST**.

Point north. Point east.  
Point west. Point south.

Imagine a line drawn around the earth midway between the poles. This line is the **EQUATOR**. Locate it upon the globe. What continents, oceans, and large islands does it cross?

The earth turns on its axis from west to east. The sun, the moon, and the stars appear to rise from the east, because the earth turns toward them.

**THE MARINER'S COMPASS** is an instrument containing a needle swinging freely upon a pivot. This needle when at rest always points



THE MARINER'S COMPASS.

toward the north. North, south, east, and west are the **CARDINAL POINTS** of the compass. Midway between north and east is **NORTH-EAST**. Similarly we have **NORTHWEST**, **SOUTHEAST**, and **SOUTHWEST**. These are the **SEMI-CARDINAL POINTS**.

**NOTE.**—Teachers should extend the exercises in direction until pupils are thoroughly familiar with them; both actual directions upon the earth and as represented upon globes and maps.

A **GEOGRAPHICAL MAP** is a flat drawing representing a portion of the earth's surface. Maps are drawn so that north is toward the top. Toward which side, therefore, is east? Which west? Which south?

**NOTE.**—Since maps represent curved surfaces upon a plane, north and south lines and east and west lines must be represented by curves. Pupils should observe that Iceland (see map of North America) is southeast, not east, of Greenland; that Bering Strait is west, not northwest, of Alaska.

**FORM OF THE EARTH.**—Ancient people supposed the earth to be flat. It appears flat to us, because the line of curve upon so large a body is so slight as to appear straight. We now know, however, that the earth is a spherical body.

The proofs are:

1. Men have traveled around it, following the same general direction until they came to the place whence they started.

2. Ships at sea, on approaching an observer, show their sails first; as they draw nearer, their hulls come into view.



3. When a level line is measured to a distance at sea, the surface of the earth is found to curve away from it. The recession of the surface is about eight inches in a mile.



4. The earth's shadow on the moon during an eclipse is circular. None but a spherical body will cast a circular shadow in all positions.

*Experiment.*—Note the shadows cast by sphere, cylinder, cone, and flat circular piece in various positions.

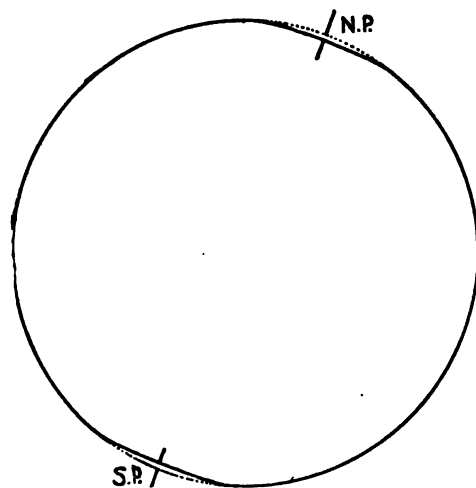
5. As people travel toward the north or the south, new groups of stars come into view and some in the opposite direction sink from sight. This was the first observation that led to the discovery of the true form of the earth.

6. People have ascended in a balloon just after sunset and thus obtained another view of the sun over the curve of the earth.

The earth is not a perfect sphere. It is spheroidal, a sphere slightly flattened at the poles.

THE DIAMETER, or distance through the earth along the axis, is 7900 miles. Along a line connecting two opposite points on the Equator it is 7926 miles. This difference of only 26 miles in numbers so large is insignificant for ordinary study.

Find the length of the equator. Find the length of a surface line from pole to pole.



EARTH IS SLIGHTLY FLATTENED AT THE POLES.

THE HORIZON is the circle bounding our view of the heavens, where the earth and the sky appear to meet.

NOTE.—The circular appearance of the horizon given by some as a proof that the earth is spherical, is absurd. The horizon would evidently appear circular if the earth were flat; for the limit of vision would give practically equal radii in all directions.

## QUESTIONS IN REVIEW.

What is a sphere? What is the Earth? How do we represent it? Name the planets. What does the Solar System include?

Define Geography. Mathematical Geography. Physical Geography. Political Geography.

Of what is the earth's surface composed? How much land? How much water? What is the water called? What is an ocean? Name the five oceans. What is a continent? How many continents are there? Name them. What is an island?

What is the Axis of the earth? What are the Poles? What is the Equator? How many motions has the earth?

What is a Geographical Map?

What is the Mariner's Compass? Name the cardinal points; the semi-cardinal points.

From North America, what ocean east? What ocean west? What ocean north?

Name the ocean south of Asia; north of Europe; south of South America; east of Africa; around the North Pole; around the South Pole.

What continent west of the Indian Ocean; east of the Indian Ocean; southeast of North America; west of Asia; southeast of Asia?

Name the continents east of the Atlantic Ocean; west of the Pacific Ocean; west of the Atlantic Ocean; south of the Arctic Ocean; west of the Atlantic Ocean.

NOTE.—Change each of the above questions to ask for the direction, thus: In what direction from Asia is the Indian Ocean?

State direction of the following: Greenland from North America, Cuba from North America, Newfoundland from North America, Madagascar from Africa, Japan Islands from Asia, Great Britain from Europe, Ireland from Great Britain, Philippine Islands from Asia, New Zealand from Australia, Borneo from Australia.

Give proofs that the earth is spherical. What is the diameter of the earth from pole to pole? Define diameter.

What is the horizon?

## THE ATMOSPHERE.

THE ATMOSPHERE, or AIR, is an invisible sea of gases surrounding the earth, resting upon its surface.

Although the air is invisible, it has weight, the force of which we feel when it is in motion as wind. The lower portions of the air next to the sea are much more dense than those upon the mountain tops, because they have the weight of a greater depth above them. The pressure at the level of the sea is about fifteen pounds upon a square inch of surface, sufficient to support a column of mercury thirty

inches high. As we ascend in a balloon or up the side of a mountain, the column of mercury falls, showing that the pressure is not so great. The same is true of the ocean; the greater depths have the greater pressure and greater density. Air is, however, much more compressible than water.



TUBE OF AIR AND  
WATER.

Waves of high and low pressure pass alternately over the surface of the country and are indicative of the atmospheric disturbances which cause storms.

THE BAROMETER is an instrument used for measuring the pressure of the atmosphere. It consists of a glass tube which must be more than thirty inches long, closed at one end and filled with mercury. This tube is inverted with the open end in a dish of mercury, which prevents the entrance of the air, when the column of mercury will stand at about thirty inches height, leaving the upper end of the tube a vacuum. By the Barometer, heights above sea level may be approximately estimated.

Mercury is 13.6 times as heavy as water. From how deep a well will a common suction pump draw water at the level of the sea?

The atmosphere is composed mainly of two gases, oxygen and nitrogen, in about the proportion of four parts of nitrogen to one of oxygen. It also contains water vapor, carbonic acid gas, and a newly discovered gas, argon.

Animals breathe the atmosphere by means of lungs, the oxygen uniting with the carbon of their bodies, forming carbonic acid gas, or carbon dioxide ( $\text{CO}_2$ ), which is thrown off in respiration. Plants breathe the atmosphere by means of leaves, depositing the carbon in their tissues and throwing off oxygen. Thus the animal and the vegetable kingdoms are made to support each other.

The oxygen of the atmosphere also supports combustion. Fires would be impossible without it.

Carbon dioxide is the heaviest of the gases composing the atmosphere, and therefore seeks the lowest levels. Deep wells, mines, and caverns sometimes contain so much of it as to cause the death of those who enter them. Such places should be tested by lowering a lighted candle into them, whose continued burning indicates the presence of sufficient oxygen to support life.

*Experiment.*—Take an ordinary fruit jar and lower a lighted candle into it by means of a piece of wire; note its continued burning; remove the candle; breathe several times into the jar; let it stand for a time; lower the burning candle into it and note the result.

In our crowded churches, halls, and schoolrooms, the carbon dioxide thrown from the lungs of the people, when cooled to the temperature of the room, sinks to the floor. The problem of ventilation is

to remove the lower stratum of the atmosphere, not the higher. How is this done in your schoolroom?

Water vapor gets into the air through the process of evaporation. Heat applied to water changes it to steam or water vapor. The heat from the sun upon the surface of water, snow, ice, the earth, or any body containing moisture, causes evaporation. The water vapor thus formed may be borne into the upper strata of air, where it may meet with a cooler current which will partly condense it and form clouds. Further condensation will cause it to fall to the earth as rain. A very cold current will cause it to crystallize into flakes of snow. Often the air near the surface becomes saturated with moisture; the temperature lowers a little and the vapor is condensed into fog. Dew is formed when the air comes in contact with cool surfaces, the vapor being collected upon them in drops; it does not fall, as is commonly thought. Water vapor in the atmosphere makes possible the refreshing showers of summer and the snows of winter.

The mobility of the atmosphere provides for the easy distribution of heat and moisture over the earth, but at the same time renders the air liable to great disturbances, causing severe and destructive storms.



NORTH CONWAY, N. H.—THE WHITE MOUNTAINS, ILLUSTRATING HIGH AND LOW LAND.

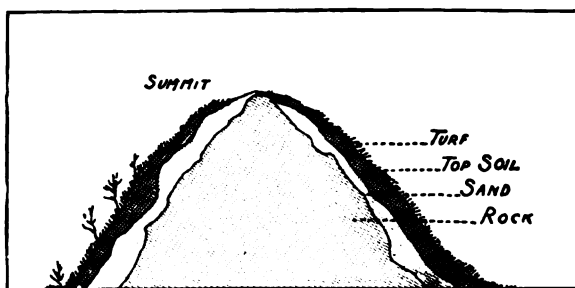
## HIGHLANDS AND LOWLANDS.

What is the Land of the earth? (See p. 10.) As we travel over it, we notice that some portions of its surface are but little above the sea level; others rise to a height of more than five miles; between



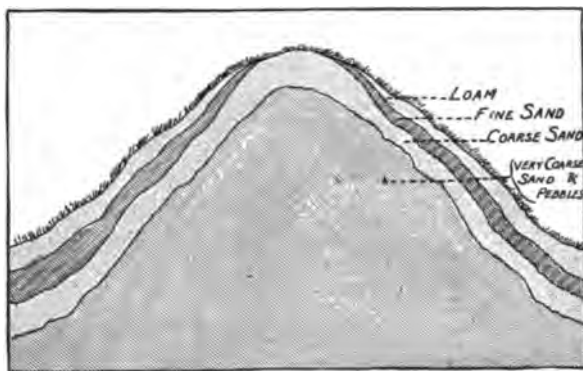
these extremes is every degree of elevation. The solid portion of the earth under the sea, called the sea-bed, presents even greater variations, the water being over five miles in depth in many places. The greatest known depth is in the southern Atlantic, where it is over nine miles. Since the surface of the sea is practically level and the same at all times, it is the basis of measurement for both the elevation of the land and the depth of the sea.

**HILLS.**—The slight elevations of land are called Hills. They present great varieties of formation. Some are of rock, indicating an age



HILL FORMATION.

as great as that of the continent itself; some are great mounds of gravel; some composed of layers of gravel, sand, and fine soil filled with pebbles; while others are simply of dirt or clay formation. These have doubtless been formed by the great forces of erosion, which will be studied later.



HILL FORMATION.

**MOUNTAINS.**—The very high elevations of land are called mountains. Mountains are similar to hills, but they are much higher and more irregular in outline. Very high points of land are MOUNTAIN PEAKS.

A continuous line of mountainous land is called a MOUNTAIN RANGE, or MOUNTAIN CHAIN.

A number of mountain ranges near together extending in the same general direction form a MOUNTAIN SYSTEM.

It is generally thought by scientific people that the earth was originally a molten mass. The outside cooled first, forming a crust. As the interior slowly cooled, it contracted into smaller space, and the crust, in suiting itself to the reduced size of the globe, was broken and folded into very irregular forms. The highlands and lowlands thus



MT. BLANC OF THE ALPS.

formed were the basis of those now existing, though they have been modified through the ages by many agencies.

A mountain which sends forth ashes, lava, and vapor is called a **VOLCANO**. Many of the mountain peaks of the world were at one time volcanoes, but have become extinct; that is, ceased to be active.

Volcanoes are probably caused by intense heat existing or formed at great depths. Where this heat finds ready escape, we have Hot Springs. Where it is covered by materials difficult to break through, a Geyser is formed. The expansive force of the intense heat becomes great enough to burst through the covering and project water and steam many feet into the air. After the force is spent the

geyser subsides, and the covering settles into place again to await another eruption. Where the covering is very heavy, the heat becomes so intense as to melt many forms of rock, which finally breaks forth in semi-liquid streams of lava and ashes accompanied by steam.

A **PLATEAU** is an extensive region of high land.

A **PLAIN** is an extensive region of low land.

A **VALLEY** is low land between hill or mountains. Longitudinal valleys are those formed by the mountain folds; they extend in the same general direction as the trend of the mountain ranges. Many valleys are transverse, cutting across the mountain ranges; these have been formed by the action of streams.

The gradual descent of land from highland to lowland forms a **SLOPE**.

The highlands are the oldest parts of the continents. They give them their general form. They once projected much higher above the water level than they do now. As soon as they were thrown up, the work of reducing them to soil began. Storms, wind, and weather changes acted upon them; the streams washed the loosened soil to lower levels, thus reducing the mountains and building up the plains. The oldest mountains of the world must, therefore, be those that are worn most nearly to base level.

The highest and, therefore, youngest mountain system upon each continent is called the **PRIMARY HIGHLAND**.

Name and locate the primary highlands of each continent, referring to the surface maps. Trace them also upon the globe. Toward what ocean does the long slope from each primary highland extend? Toward what ocean the short slope?

The second highest mountain system of each continent is called the **SECONDARY HIGHLAND**.

Name and locate the secondary highland of each continent.

Locate the lowlands (plains) of each continent.

## DRAINAGE.

**NOTE.**—An excursion is desirable preceding this lesson.

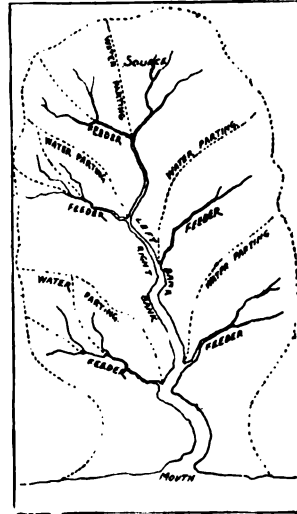
When it rains upon any portion of the earth, a part of the water sinks into the ground and a part runs down the slopes toward the stream beds. It seeks little passage-ways, which unite and combine until we find the water running into brooks in quite large rivulets. On the crest of the hill between two brooks, we will find the water separating, part running toward one brook and part toward the other. This line of separation is a **DIVIDE**, or **WATER-PARTING**. The slope is a **WATER-SHED**. The brook with all of its water-sheds is called a **BROOK-BASIN**.

If we look along the brook, we will find portions of fine dirt where the rivulets have joined the brook. Where did this dirt come from? The water in the brook is muddy. Why is this? After a

few hours it will be clear again, and along its sides and in the places where it runs slowly, we find a great deal of this sand. Can you explain why?



A BROOK BASIN.



MAP OF BROOK BASIN.

This brook-basin represents what is going on all over the earth. There are brooks without number. They unite into larger streams, called creeks, and these combine to form rivers, which flow away to the sea.

What becomes of the water which sinks into the ground? Some of it goes to refresh vegetation; but much of it finds its way to the



A SPRING.

surface again and to the streams through springs. The water filters through the ground until it reaches a stratum of rock or a bed of clay

which it cannot penetrate. It flows along the surface of this rock or clay, seeking its lowest places, combining with other streams just the same as on the brook slope until it reaches a hillside, where it issues as a spring. Some springs are constant, others exist only during wet weather. Why? Were it not for the sinking of the water into the ground, reaching the rivers by this slower process, our stream valleys would be the scene of great floods after every heavy rain, only to become dry beds when the flood had passed.

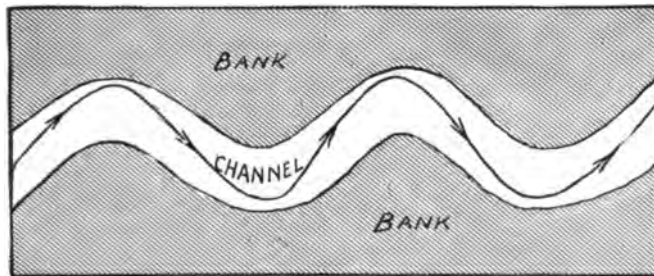
### RIVERS.

A RIVER is a large stream of water flowing through the land.

Find upon the maps the chief river of each low plain.

The parts of a stream are the following: THE MOUTH is where it flows into some larger body of water. THE SOURCE is where it begins.

THE BED of the stream is the land upon which its water flows. THE BANK is the land bordering the stream. THE CHANNEL is the part of the stream where the water flows swiftly and which does the work of cutting and carrying.



SHOWING THE WORK OF A RIVER CHANNEL.

Down the stream is toward its mouth. Up the stream is toward its source. The RIGHT BANK is on the right hand as you go toward the mouth.

Find right and left banks, the winding course of channel and direction.

Describe each of the following rivers, telling where it rises, in what direction and into what it flows:

**NORTH AMERICA:** Mississippi, St. Lawrence, Rio Grande, Colorado, Columbia, Yukon, Mackenzie, Ohio, Missouri.

**SOUTH AMERICA:** Amazon, Plata, Orinoco.

**EUROPE:** Danube, Volga, Rhine, Rhone.

**ASIA:** Obi, Yenesei, Lena, Hoang, Yangtze, Ganges, Indus.

**AFRICA:** Nile, Niger, Congo, Zambezi.

**AUSTRALIA:** Murray, Darling.

The action of water in its surface wash, together with other agencies, has great influence in shaping the surface of the earth. The rock and mineral substances which form our highland regions are slowly disintegrated by the forces of nature and are carried away by this wash to build soil in other places.

During flood time, great quantities of rock and soil are washed down by the mountain torrents. The coarser materials, rocks and stones, are soon dropped ; the pebbles, gravel, and sand are dropped in succession as the water reaches gentler slopes where it flows more slowly, and during floods the finer soil is spread out on the lowlands, thus forming a flood plain. The river does its greatest work during flood time.

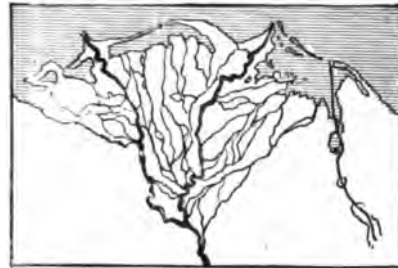
Some of the fine soil (silt) is carried to the mouth and dropped upon the sea floor, thus building out the land of the continents. When a great deal of this silt is deposited at the mouth of a river, and there is no strong ocean current to carry it away, the land is very rapidly built up in the form of the Greek letter  $\Delta$ . This formation is called a DELTA. From maps find rivers which build deltas.



PICTURE OF A DELTA.



MAP OF DELTA OF THE MISSISSIPPI.



MAP OF DELTA OF THE NILE.

A river may be said to have its youth, maturity, and old age. A young river, finding its way down a diversified slope, winding about through the depressions in the surface, will be characterized by nu-



THE WORK OF A RIVER IN ITS DECLINE.

merous rapids, waterfalls, and lakes ; it will have very little flood plain. As it grows older, the falls and rapids are worn down, the lakes are filled, the valley and basin broaden, and a fertile flood plain is built, which is favorable to the growth of food articles.



The disintegrating forces, referred to above as acting upon the surface forms, are the following:

1. Solution in water: The water, as it passes through the ground and porous rocks, slowly dissolves many of them.

2. Chemical combinations are formed between the mineral substances and the elements contained in the percolating water.

3. Undermining: The two forces already mentioned may undermine the base upon which other formations rest, causing them to fall, crushing and grinding rocks to fragments.

4. Freezing: In cold localities the water near the surface, by continued freezing and thawing, tends to rend the more refragible rocks.

5. Plant Action: Plants force their roots down into the rocky beds, sometimes into the rocks themselves, splitting them apart. Light forms of vegetation tend to pulverize the soil in which they grow.

Some rocks are much more readily worn away than others. Usually the high mountain peaks are composed of hard rocks which



MATTERHORN, SWITZERLAND. ILLUSTRATING SOME PARTS OF A STREAM.

have withstood the ravages of time, while neighboring sections have succumbed to these silent but persistent forces.

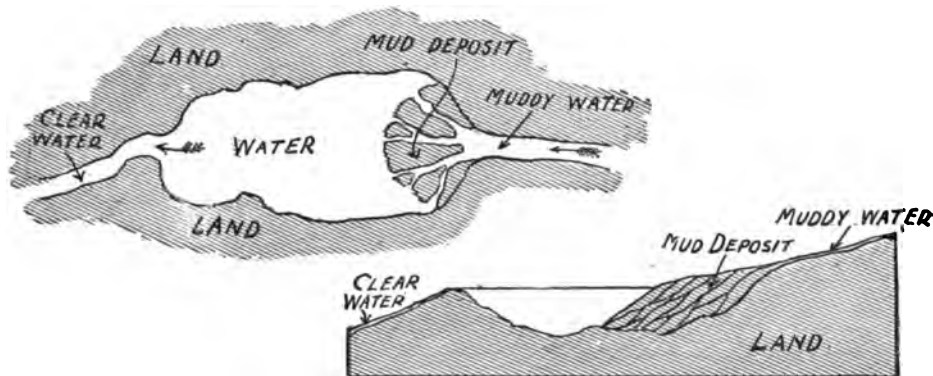
These processes are slow, and we notice little change in our familiar landscapes; but they have been going on for ages; it is likely, too, that the process was much more rapid in earlier times, when the mountain tops were much higher, the slopes more precipitous, and the storms more frequent and severe than now.

This wearing away of rock formation is called **EROSION**

## LAKES.

A **LAKE** is a body of water of considerable extent within land regions.

A lake is formed where there is an extent of low land surrounded by high land, forming a hollow; into this water has continued to flow, often from many sources, until it is filled up to the lowest part



MAP AND CROSS SECTION SHOWING LAKE FILLING.

of the surrounding highland, where it finds an outlet. Some lakes have no outlet, the evaporation being sufficiently rapid to remove the water as fast as it flows in. The water of such lakes is salty. Great Salt Lake and the Caspian Sea are examples.

A **POND** is a small lake. All pond and lake basins are being gradually filled by the materials which their tributaries bring to them. Inland swamps and marshes, and many rich meadows, occupy the places of old lakes.

Locate the following lakes upon the continent maps:

**NORTH AMERICA:** Superior, Huron, Michigan, Erie, Ontario (these five are called the Great Lakes), Great Salt, Winnipeg, Athabaska, Great Bear, Great Slave, Chapala, Nicaragua. **SOUTH AMERICA:** Titicaca. **EUROPE:** Ladoga, Onega. **ASIA:** Aral, Balkash, Baikal. Which are salt? **AFRICA:** Victoria, Tchad, Tanganyika, Nyassa. Which is salt? **AUSTRALIA:** Eyre, Torrens, Gairdner. Name the outlet of each lake.



LAKE GENEVA, SWITZERLAND.

## LAND AND SEA COAST-FORMS.

Trace the coast-line of the different continents. What difference do you notice in that of North America and Europe as compared with that of South America and Africa?

The indentures of the sea into the land forms are caused where there are depressions in the land along the coast. These indentations are of great commercial importance. Can you tell how?

The high-land formations along the coast form projections into the sea. These are often dangerous to commerce. What means are taken at night or in foggy weather to warn vessels of their location?

The indentures of the sea into the land and the projections of the land into the sea are called COAST-FORMS OF SEA AND LAND. These arms have various names according to their form. The coast-line is constantly changing. The change is caused by the uplifting or subsiding of the land and by the action of winds and waves.

A SEA, GULF, or BAY is a portion of the sea partly or almost entirely inclosed by land.

Some lie in bends of the coast-line; as, Bay of Biscay, Gulf of Guinea, Arabian Sea, Bay of Bengal. Locate each, stating what coast it indents and to what ocean it belongs.

Some lie between bodies of land, are nearly inclosed, but have two or more openings to the sea; as, Japan Sea, Caribbean Sea, Bering Sea, Baffin Bay, Gulf of St. Lawrence, North Sea, Irish Sea, Okhotsk Sea, China Sea. Locate each as above.

Some are nearly surrounded by land and have only one opening to the sea; as, Hudson Bay, Gulf of Mexico, Baltic Sea, Mediterranean Sea, Black Sea, White Sea. Locate each as above.

Those of the first class are more properly called bays; those of the second class, seas; and those of the third class, gulfs; but as the names are applied, you will observe that Sea, Gulf, and Bay are different names given to similar bodies of water.

A STRAIT, or CHANNEL, is a narrow passage of water separating two bodies of land and connecting two parts of the sea.

Locate the following straits, stating what lands they separate and what waters they connect: Hudson, Davis, Bering, Florida, Gibraltar, English Channel, Bab el Mandeb, Malacca, Magellan, Yucatan Channel, Mozambique Channel.

A PENINSULA is an arm of the land nearly surrounded by water. Peninsula means almost an island. Compare with gulf or sea.

Locate the following peninsulas, stating what waters surround them and of what land they form a part: Nova Scotia, Florida, California, Yucatan, Alaska, Scandinavia, Italy, Arabia, India, Malay, Corea.

A CAPE is a point of land extending into the water. A cape that is high and rocky is called a HEADLAND, or PROMONTORY.

Locate the following capes, stating from what coasts and into what waters they project: Farewell, Hatteras, Sable (two), Mendocino, San Lucas, Prince of Wales; Gallinas, St. Roque, Frio, Horn, Parina; North, Land's End, Finisterre, St. Vincent; Chelyuskin, East, Romania, Comorin; Bon, Guardafui, Good Hope, Verd.

AN ISTHMUS is a neck of land joining two larger bodies. Compare with Strait. Nearly every peninsula has its isthmus joining it to the mainland.

Locate the Isthmus of Panama or Darien; the Isthmus of Suez. What lands do they connect? Which land will we call the peninsula in each case, and why? State what waters are separated by each of these isthmuses.

## PEOPLE.

The number and character of the people inhabiting different parts of the earth depend upon its physical conditions, chief among which are surface, soil, ease of access, and climate.

The people of the earth may be roughly classed as civilized, half-civilized, and savage.

Civilized people form themselves into governments, separating themselves and dividing the earth into parts called countries, in which they build homes, collect in cities, make public improvements, carry on industries, engage in trade with each other and with other countries.

North America has five of these divisions: the United States, to which belongs Alaska; British America, or the Dominion of Canada; Mexico, Central America, and Danish America.

Locate each on the maps, stating what part of the continent it occupies.

On the map of South America, locate Brazil, Argentina, Colombia, and Chili.

In Europe, locate Great Britain, Germany, France, Spain, Russia, Austria, Italy, and Turkey.

In Asia, locate China, Japan, India, and Siberia—which belongs to Russia.

In Africa, locate Egypt, The Soudan, and Cape Colony.

In Australia, locate Victoria, New South Wales, and Queensland.

State in what part of the country each of the following cities is found, and in what direction from those in small capitals each of the others in the same group is located:

NEW YORK, Albany, Buffalo.

CHICAGO, Milwaukee, Detroit, Cleveland, Cincinnati, St. Louis, Kansas City, Omaha, Minneapolis, St. Paul.

PHILADELPHIA, Pittsburgh.

BOSTON, Providence.

WASHINGTON, Baltimore, Nashville, Charleston.

NEW ORLEANS, Galveston, Memphis.

SAN FRANCISCO, Los Angeles, Portland, Seattle, Denver.

In what part of British America are Montreal, Toronto, Winnipeg, Quebec, Halifax?

Cities in Europe: London, Paris, Berlin, St. Petersburg, Constantinople, Rome, Madrid.

In South America: Rio Janeiro, Buenos Ayres.

In Asia: Calcutta, Bombay, Madras, Canton, Peking, Tokio.

In Australia: Melbourne, Sydney, Brisbane, Adelaide.

In Africa: Alexandria, Cairo, Khartoom, Cape Town.

## OCCUPATIONS.

People upon the earth engage in various occupations, depending upon the physical features of the country,—the surface, the soil, the climate, the mineral deposits,—and the vegetable and animal life.

In rich, level plains and gently undulating country, *farming*, or tilling the soil, will be the leading occupation. In a new country, these are usually the portions first occupied, and farming is the first industry. Near the coast, along the streams, and upon the lakes, *fishing* may be extensively carried on. In the forest regions, *lumbering* is a great industry, and *hunting* may engage people. Compare these occupations in importance and benefit to mankind.

Mountainous countries often have rich mineral deposits, and many people will be engaged in digging these minerals from the earth, or *mining*. Rugged districts often have great quantities of fine stone for building or ornamental purposes, the procuring of which is called *quarrying*.

Broad, grassy plains which lack sufficient moisture for agriculture, and many rough and mountainous regions, may abound in fine pastures, where *grazing*, or *herding*, is a leading occupation.

Some of the hilly countries, where water power is abundant, furnish excellent facilities for *manufacturing*; and where the means of easy transportation exist, this becomes a great industry. If the means of transportation are difficult, these same countries may be given up to grazing instead.

Many of the people in large cities are engaged in *commerce*, or *trade*, by which the articles of one locality are made available to the people of other localities where they cannot be produced.

A carpenter builds a barn for a farmer, who in return furnishes him with the products of his farm. This is commerce in its simplest form. In its larger aspects, it embraces several agencies. *Merchants* buy from those who have more than they need, and keep in store to supply to those who lack. This buying and selling extends throughout the world. *Transportation Companies* convey articles from one place to another. The principal means of transportation are *railroads*, *canals*, and *steamship lines* plying upon rivers, lakes, and the sea. The *Mail Systems*, *Telegraph*, *Cable*, and *Telephone Companies* provide means of communication between parties separated by distance.

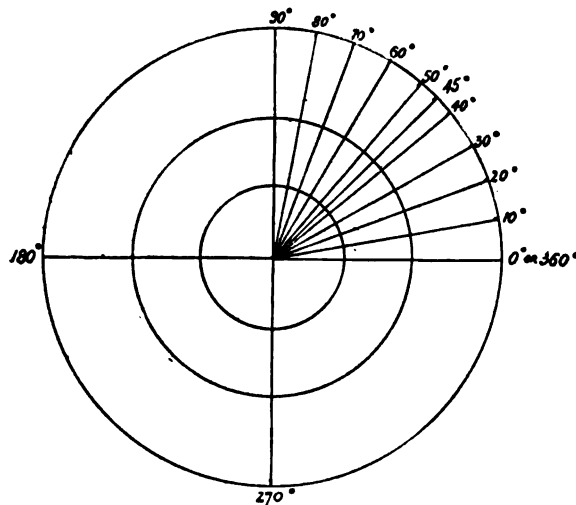
Do you know of any place where fishing is extensively carried on? Do you know any persons engaged in it for profit? Do you know any place where lumbering is the chief industry? Where do people carry on mining? Do you know any people extensively engaged in manufacturing? What do they make? Mention some things which we get through trade with other countries. Mention some things which we are able to supply. What do you think would be the occupations of the people in the cold belts? In the hot belt? In the temperate belts? Compare farming and manufacturing as to importance.

## LATITUDE AND LONGITUDE.

A **CIRCLE** is a plane surface bounded by a curved line, every point of which is equally distant from a point within, called the center.

The curved line is called **THE CIRCUMFERENCE** of the circle.

**THE DIAMETER** of a circle is a straight line drawn through the center to two opposite points in the circumference. **THE RADIUS** is half the diameter, or a line drawn from the center to any point in the circumference.



**AN ANGLE** is the divergence of two lines which may meet at a point.

Two radii meeting at the center form an angle.

Angles and circumferences are measured in degrees.

Every circumference may be divided into 360 equal parts or arcs.

Each arc measures a degree. The radii drawn to the center form an angle of 1°.

Any number of these arcs may be united into a larger arc, the radii from the extremities of which would form an angle of the same number of degrees. By observing the illustration, we note that an angle of 10° or 30° is always the same; but arcs differ in length according to the size of the circle. An arc of 1° on the surface of an apple

## CHAPTER II. LATITUDE AND LONGITUDE.

Suppose that the vertical rays of the sun are of  $1^\circ$  on the globe (or that the sun is at a distance of 100 miles (one minute) and that the sun is at a distance of 100 miles. This is called **THE GEOGRAPHIC LATITUDE**.

Let us suppose that the sun is at a distance of 100 miles upon the earth's surface. The sun is at a distance of 100 miles. The north pole is at a distance of 100 miles from the south pole 90° south.

### LATITUDE.

Let us suppose that the sun is at a distance of 100 miles. This is called their **Latitude**. Referring to the globe we find that New York is about  $40^\circ$  north latitude. The city of Mexico about  $20^\circ$ , Montreal about  $45^\circ$  north.

Let us suppose that the sun is at a distance of 100 miles. San Francisco, London, New York, Paris, Rome, Melbourne, Cape Town, Rio de Janeiro, Sydney, Melbourne, Buenos Aires, and Memphis.

Let us suppose that the sun is at a distance of 100 miles. Buenos Aires and Memphis. Referring to the globe we find that the sun is at a distance of 100 miles.

### LONGITUDE.

Let us suppose that the sun is at a distance of 100 miles. From what direction does the sun appear to come? From what direction does it appear to go? From what direction does it appear to go?

What time is it at a place east of us? What time at a place west of us? What time at a place west of us?

What time is it at a place east of us? What time at a place west of us? What time at a place west of us? In what direction would you draw a line on the globe so that it would be a straight line throughout its length at the same time? How far would this line extend?

This line is called a **MERIDIAN** or **meridian line**. Any place may have such a line. The meridian passing through the observatory of Greenwich near London is called the **PRIME MERIDIAN**. The number of degrees east or west of this place is the **Longitude** of a place.

Referring to the globe we find that the longitude of Washington is about  $77^\circ$  west, San Francisco  $122^\circ$  west, Constantinople  $29^\circ$  east, Bombay,  $72^\circ$  east. Find the longitude of each place mentioned above.

By latitude and longitude we state most accurately the location of a place upon the globe.

Find the places described by the following latitudes and longitudes:

$60^\circ$  N.  $30^\circ$  E.,  $52^\circ$  N.  $13^\circ$  E.,  $49^\circ$  N.  $2^\circ$  E.,  $42^\circ$  N.  $12^\circ$  E.,  $50^\circ$  N.  $97^\circ$  W.,  $38^\circ$  N.  $90^\circ$  W.,  $35^\circ$  N.  $90^\circ$  W.,  $30^\circ$  N.  $90^\circ$  W.,  $38^\circ$  S.  $145^\circ$  E.,  $23^\circ$  S.  $44^\circ$  W.

As we pass from one latitude to another we note changes in *temperature*. As we pass from one longitude to another we note changes in *time*.

How many degrees in the circle of the earth? How long (how many hours) does it require for the vertical rays of the sun to traverse the circle of the earth? How many degrees in one hour? In one hour the sun passes over  $15^\circ$ . In one minute  $1/60$  of  $15^\circ$ , or  $15'$ , called *minutes* of longitude. In one second  $1/60$  of  $15'$ , or  $15''$ , called *seconds* of longitude.

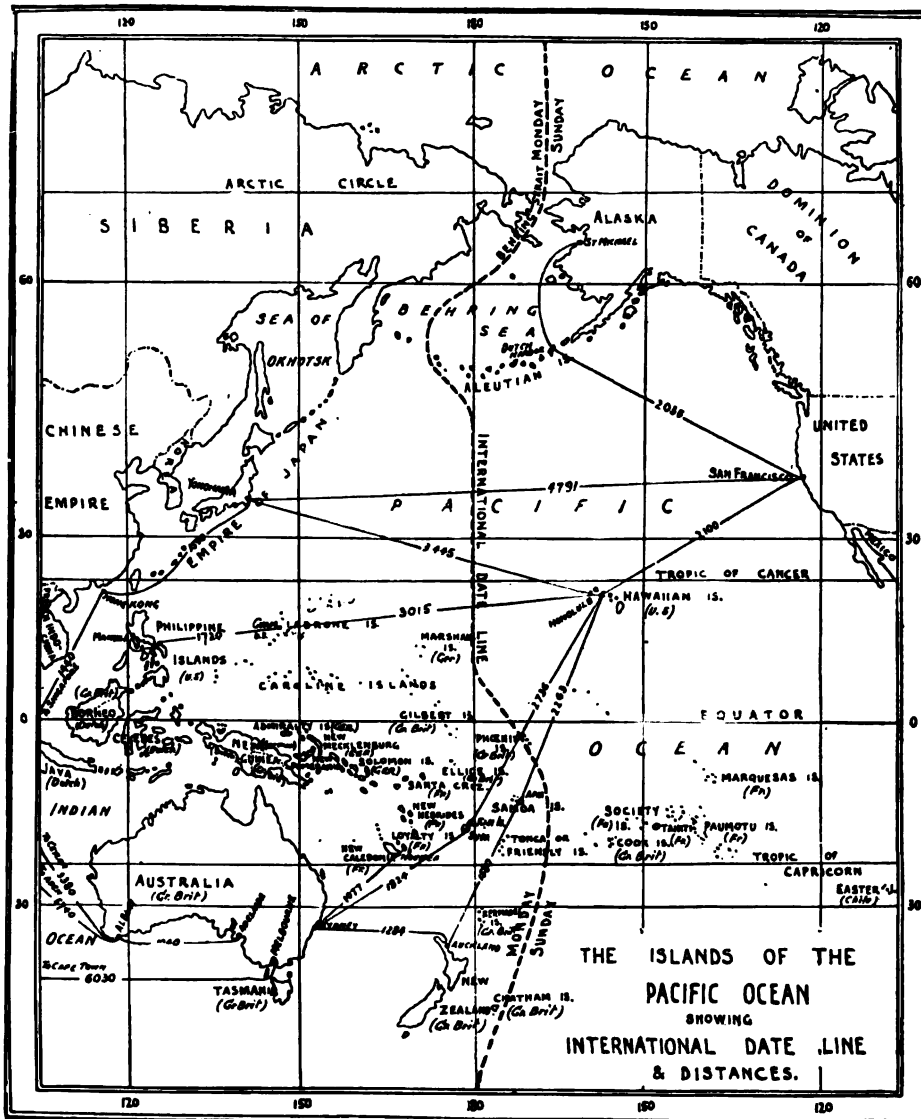
Therefore, when it is 9 o'clock here, what time is it at a place  $15^\circ$  east of here?

At a place 20° west of us, it will be 1 hour 20 minutes earlier than nine o'clock, or 20 minutes before 8 A. M.

When it is noon where you live what time it is in London, in Washington, in Chicago, in San Francisco, in New Orleans, in Rome, in New Zealand?

In what city would a clock set for Washington, D. C., be 1 hour 50 minutes too fast? In what city 2 hours 10 minutes too slow?

The meridian halfway around the earth is 180° either east or west. It is called THE INTERNATIONAL DATE LINE. Notice that it passes through the Pacific Ocean just east of New Zealand. At noon to-day at Greenwich it is midnight on this line, and it is the same day all over the earth. But a new day is beginning at this line which will require 24 hours to spread itself all over the world and 24 hours more to get off again, or to be succeeded in every part of the earth by the following day.





## CLIMATE.

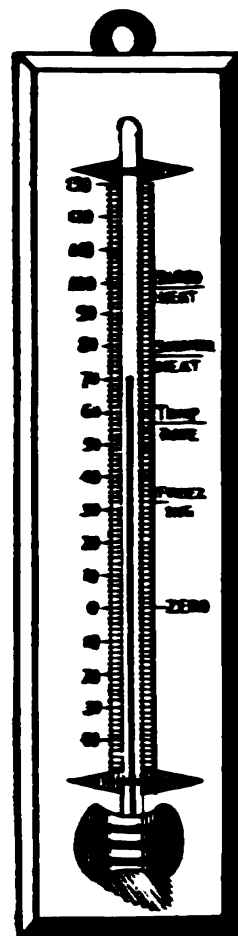
THE CLIMATE of a place is its condition as regards heat, moisture and healthfulness.

HEAT, OR TEMPERATURE, is measured by an instrument called a **Thermometer**.

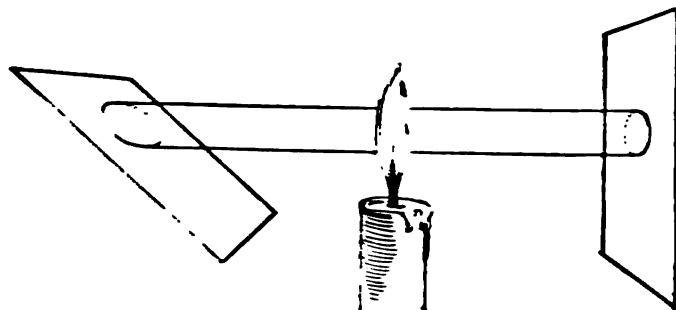
THE THERMOMETER in common use is Fahrenheit's, so called from the name of its inventor. It consists of a sealed glass tube with a bulb at one end, the bulb and a part of the tube being filled with mercury, the remaining part of the tube being a vacuum. The mercury expands with the heat and rises in the tube; it contracts as it becomes colder, and falls. The tube is laid upon a scale, upon which the height of the mercury at the temperature of boiling water is marked 212, and that of melting snow mixed with salt, at 0. The space between is laid off in 212 divisions called degrees, and extended in like manner above the boiling point and below zero. By this scale, freezing occurs at 32°, the normal temperature of our bodies at 98-3 5°, comfortable summer warmth at 70°. In winter in some parts of our country, the mercury falls to 30 or 40 degrees below zero; in summer it rises to over 100 in the shade.

The earth receives its heat from the sun. We have all noticed the difference in the heat at different times in the day or year.

Suppose that a beam of light or heat an inch square falls perpendicularly upon the earth: it will give all of its heat to one square inch of surface. Suppose it strikes the surface at an

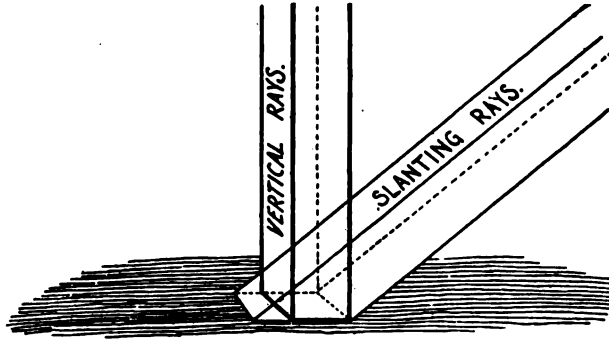


A THERMOMETER.



*Experiment.*—Cover two cards with wax or lard; place their centers equally distant from a candle or gas flame, one so that the heat radiated from the flame will strike the surface of the card perpendicularly, the other obliquely, as in the figure. Note the results. Which melts the more rapidly? Where does the melting begin? Why?

angle of forty-five degrees; it will give its heat to an area an inch wide and nearly one and one-half inches long. A square inch of surface will therefore get only two-thirds of its heat.



There is another reason why slanting rays give less heat than perpendicular rays. If I stand in front of a window and throw a ball forcibly against it, the glass will be broken; but I may stand at one side and throw the ball with the same force, striking the glass at an angle, and it will be reflected without breaking the glass.



We may conclude from the above that the more nearly perpendicular, or vertical, the sun's rays are to the surface of the earth, the smaller is the area upon which the same amount of heat

acts and the more the heat rays penetrate and the warmer the surface becomes; the more slanting the rays which strike the earth, the larger the area upon which the heat is spread and the more the rays are reflected and the less the amount of heat absorbed by the earth's surface.

Why do we receive more heat from the sun at noon than in the morning or in the evening? Notice that the sun at noon in summer is much higher in the heavens than it is at noon in the winter. What is the result?

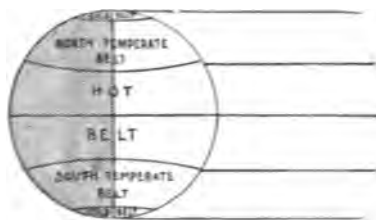


In March and September the earth is related to the sun in such a way that the sun's rays are vertical upon the earth's surface at the

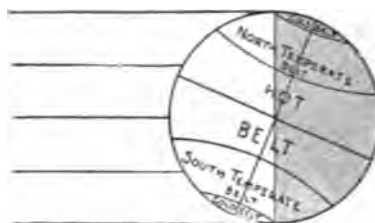
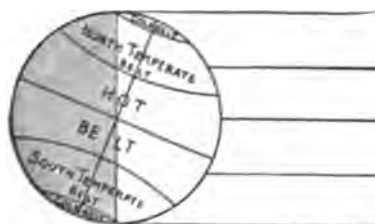
equator. About the equator, therefore, is the region of greatest heat. This region, a broad belt around the earth, extending for some distance on each side of the equator, is **THE TORRID ZONE**.

At the poles, you observe that the sun's rays do not strike the earth at all, but are in a line tangent to its surface. Consequently, the polar regions get almost no heat from the sun, and so are filled with snow and ice all the year.

The broad circles of intense cold about the poles are **THE NORTH FRIGID** and **THE SOUTH FRIGID ZONES**.



SHOWING THE SUN'S RAYS IN MARCH AND SEPTEMBER.



SHOWING THE SUN'S RAYS IN JUNE AND DECEMBER.

Between the poles and the equator, the sun's rays are more or less oblique to the earth's surface, according to the nearness to the poles or to the equator. Consequently we have every variety of temperature from the extreme cold of the poles to the extreme heat of the equator.

The belts lying between the Frigid Zones and the Torrid Zone are seldom extremely hot or extremely cold; they are **THE NORTH TEMPERATE** and **THE SOUTH TEMPERATE ZONES**.

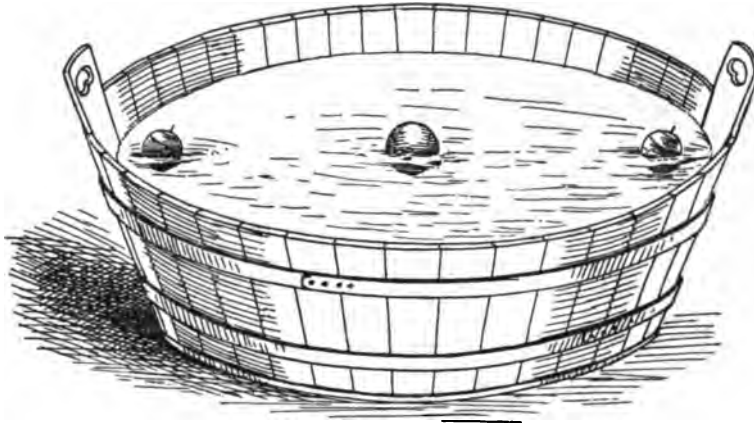
Latitude is the chief influence affecting temperature. Were it the only factor, the isotherms, or lines of equal temperature, would at all times be parallel to the equator. This is, however, far from the truth. We will consider in order four other influences upon temperature: inclination of the earth's axis, causing the change of the seasons, proximity of the sea, wind and water currents, and slope.



THE ZONES.

## THE SEASONS.

If the earth stood in the same relation to the sun all the time, we would have about the same temperature all the year. Instead, we have in the Temperate Zones four marked divisions—SPRING, SUM-



THE PLANE OF THE EARTH'S ORBIT AS SHOWN BY A TUB OF WATER.

The body floating in the middle of the tub represents the sun; those near the edge represent the earth, which describes its orbit around the edge. The surface of the water, therefore, represents the *plane of the earth's orbit*.

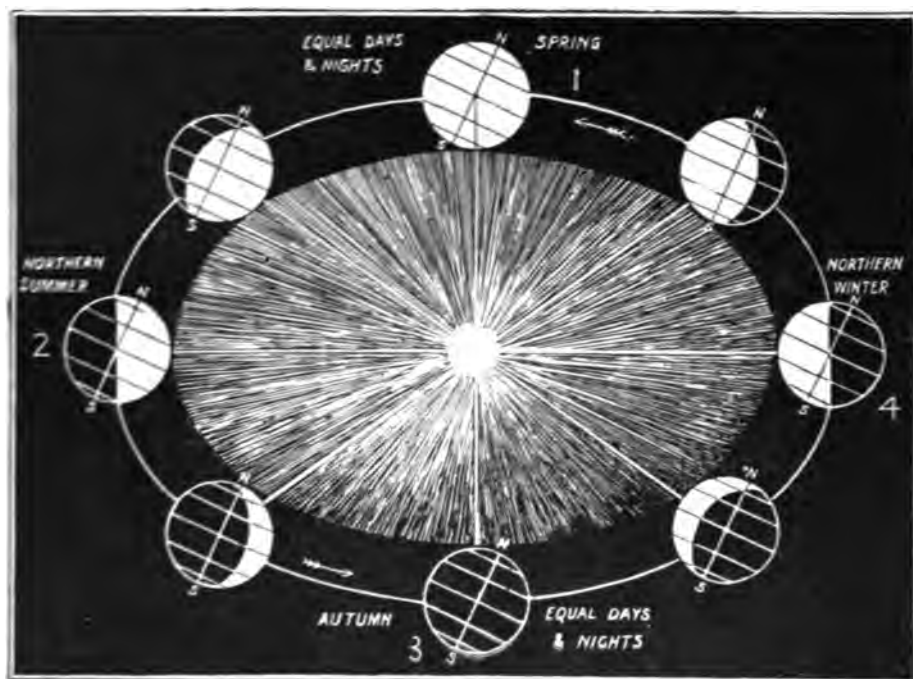
MER, AUTUMN or FALL, and WINTER, following in succession year after year. Let us study the cause.

The earth journeys around the sun in a great elliptical path, called THE EARTH'S ORBIT. This orbit is about 91-1/2 millions of miles from the sun at its nearest point and 94-1/2 millions at its farthest point.

The plane of the earth's orbit is an imaginary plane passing through the sun and this path. If the axis upon which the earth revolves were perpendicular to this plane, we would have no seasons, but would have our hot, cold, and temperate belts the same throughout the year. The earth's axis inclines toward this plane about 23-1/2 degrees from the perpendicular and remains in this position as it journeys around the sun. At position No. 1 in the figure (p. 36), it is neither leaning toward the sun nor away from it. The sun's rays are vertical at the equator and reach from pole to pole. Half of each parallel is in the sunlight and half in the dark; hence, days and nights are equal all over the earth. The earth and the sun are in this relation on the 20th of March each year. It is called THE VERNAL EQUINOX. It marks the middle of spring.

The sun moves on in its orbit, reaching position No. 2. Here the axis of the earth, leaning toward the same point in the universe, inclines toward the sun. The sun's rays are vertical 23-1/2 degrees north of the equator, and as the earth revolves upon its axis the ver-

tical rays describe a circle upon its surface parallel to the equator  $23\frac{1}{2}$  degrees north of it. This circle is the Tropic of Cancer. It marks the limit of the Torrid Zone. Trace it upon the globe and maps. At the same time the rays extend  $23\frac{1}{2}$  degrees beyond the North Pole and fall  $23\frac{1}{2}$  degrees short of the South Pole, marking the Arctic and the Antarctic Circles, the limits of the Frigid Zones. The North Frigid Zone now has its long day and summer, and the South Frigid Zone its long night and winter, each lasting six months



at the poles. The North Temperate Zone has its warmest period, summer; the South Temperate Zone, its coldest period, winter. In the North Temperate Zone the parallels of latitude are not equally divided between sunlight and dark at this time. Which is greater? What is the result? How is the South Temperate Zone affected? The earth and the sun are in this relation June 21 each year. This is called **THE SUMMER SOLSTICE**. Solstice means *sun standing*. The sun has reached its farthest point north of the equator and seems to stand before starting upon its return to the south.

Position No. 3 is attained September 22, which is just the same as position No. 1, with exactly the same effects. The North Temperate Zone now has its autumn, which differs from spring because it follows the summer, while spring follows the winter. This time is called **THE AUTUMNAL EQUINOX**.

Position No. 4 is reached December 21; where do the vertical rays now fall upon the earth? What seasons do the Temperate Zones have at this time? What effect is produced in the length of

the days and the nights? How are the parallels south of the Antarctic Circle divided between sunlight and dark? How those north of the Arctic Circle?

*Experiment.*—Place a globe in the sunlight so that the rays will fall upon it as indicated in each position mentioned above. Notice the day and night lines as shown by the sunlight and shadow and the proportion of light and shadow upon our parallel in each case. Note the results as the position is gradually changed.

How much of the year does each half of the Torrid Zone have the sun overhead? At this time it has what is called its wet season, while the other half has its dry season. How many seasons in a year, therefore, has the Torrid Zone? How many have the Frigid Zones?

#### AIR CURRENTS, OR WINDS.

The General Effect of Heat.—Heat expands nearly all substances. Fill a bladder or rubber balloon with air, blowing it up tight; bring it near the fire. The heat will so expand the air as to burst the bladder or balloon.

Take two metal rings, one of which will just pass through the other; heat the smaller one, then see if it will pass through.

Notice that the car tracks are laid with a little space between their ends. Why is this?

The pendulum of an ordinary clock lengthens a little in the summer, so that the clock needs regulating anew to make it run fast enough.

Apply heat to one end of a long pan containing water. The water immediately over the heat will become warm and expand. This makes the same bulk of water lighter than at the other end of the pan. The heavier water will tend to take the place of the lighter, which will be forced up and flow away on the surface. Currents will be set up which can readily be traced by sprinkling a little meal in the water.

This is just what is taking place on the earth. At the equator the heat of the sun is applied most strongly; the air is expanded and becomes lighter than that at the poles; the heavier air of the poles flows southward toward the equator, and the lighter air of the equator flows northward toward the poles.

NOTE.—The common expression that heated air or water rises, is explained by saying that it is forced up by the cooler, heavier body of air or water surrounding it, just as when shot is poured upon a measure of wheat, the whole being shaken, the shot will go to the bottom of the measure, forcing the wheat up. When heat is applied to water and air, however, they are expanded, and this expansion gives a pushing movement to all surrounding matter, just as, in a more intense way, occurs in an explosion of gun-powder. As this expansive force finds less resistance above, there results an upward movement of the air or water.

If the earth did not move, and there were no land masses in the way, these currents would flow directly north and south. The motion of the earth affects the direction of the currents as follows:

The air at the equator, by the revolution of the earth upon its axis, is moving through a great circle 25,000 miles per day, or at the

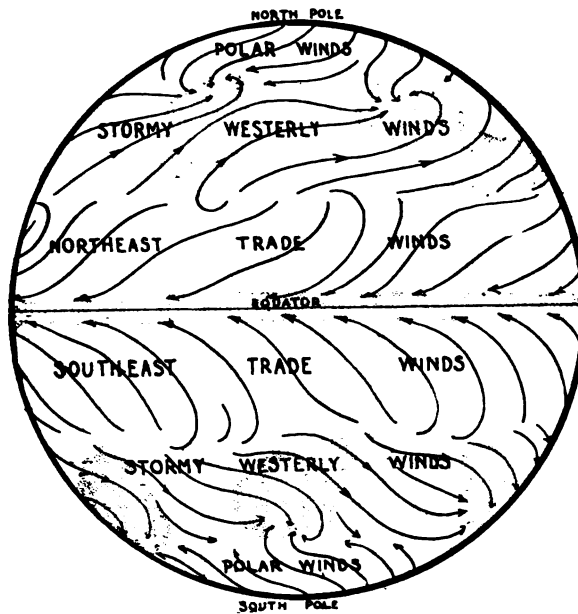


CHART OF WINDS.

rate of about 175 miles per minute. As it moves northward it comes into latitudes represented by smaller and smaller circles until at the pole it would merely whirl about a point once a day. In our latitude,  $40^{\circ}$  N., the circumference of the earth is about 20,000 miles. The movement of the surface is therefore about 135 miles per minute. A current of air moving northward therefore comes upon parts of the earth's surface which are moving more slowly toward the east than this air is moving, and the tendency is for it to get ahead of the surface and move toward the northeast.

The cold air current of the north, moving southward, comes upon portions of the earth's surface which move more rapidly toward the east than it does. Would the air current tend to get ahead or lag behind? What direction would it flow?

The currents of heavy cold air from the northern zones cling close to the surface, forcing the southwest winds of light, warm air upward. In the middle zones, the warm winds from the equator become cooled and descend to the surface, mingling with the Arctic currents, whence we have variable winds.

From the North Temperate regions the flow is steadily southwestward, in what are known as the Trade Winds. In what direction do the Trade Winds of the southern hemisphere blow? These Trade

Winds are calculated upon by sailors; avoided by those whom they would hinder, sought by those whom they can aid.

The air currents at sea meet no obstacles, and are therefore obedient to this general law of direction. The land currents may be deflected from their course by mountain ranges.

What mountain range deflects the Arctic Current in the northern part of North America? What direction would the wind blow in the upper Missouri River Valley? Would the Secondary Highlands of North America have any effect upon the direction of these regular air currents? What parts of Europe are affected by cold-air currents? What part of Asia? What parts of North America are affected by the warm southwest winds? What parts of Asia? What highlands in South America lie across the path of the Trade Winds? What effect has the change of seasons upon the location of wind belts?

### OCEAN CURRENTS.

Were there no continental land masses, ocean currents would correspond with air currents, since the same influences operate to cause

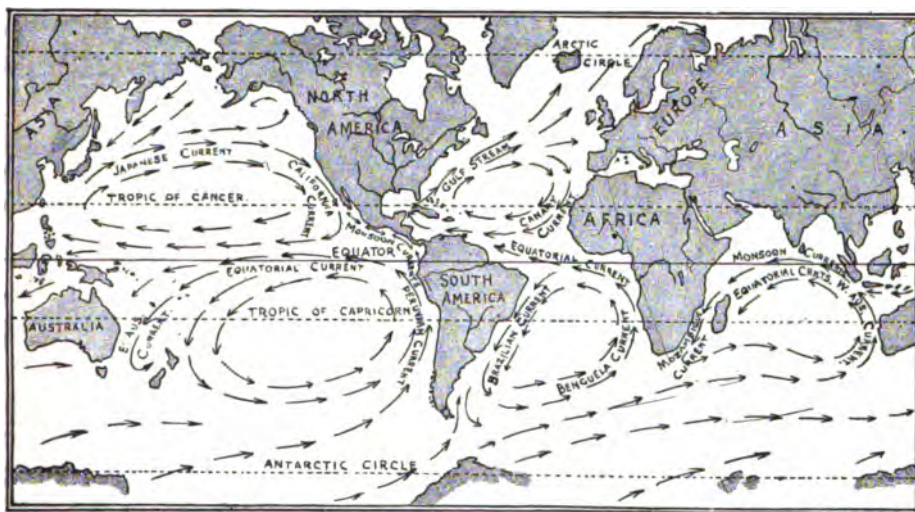


CHART SHOWING OCEAN CURRENTS.

them. What direction will we expect warm-water currents north of the equator to flow? In what direction shall we expect cold currents from the North Pole to flow? In what direction from the South Pole?

What shore would be washed by a current of warm water starting in the eastern part of the Atlantic Ocean? Would the current be long or short? Would it be of greater or less volume if it could have a longer sweep? Where will we expect the strongest warm current of the Atlantic to begin? This current is called the Gulf Stream. Where will we expect the strongest current of the Pacific to begin? This is called the Japan Current. What shore will



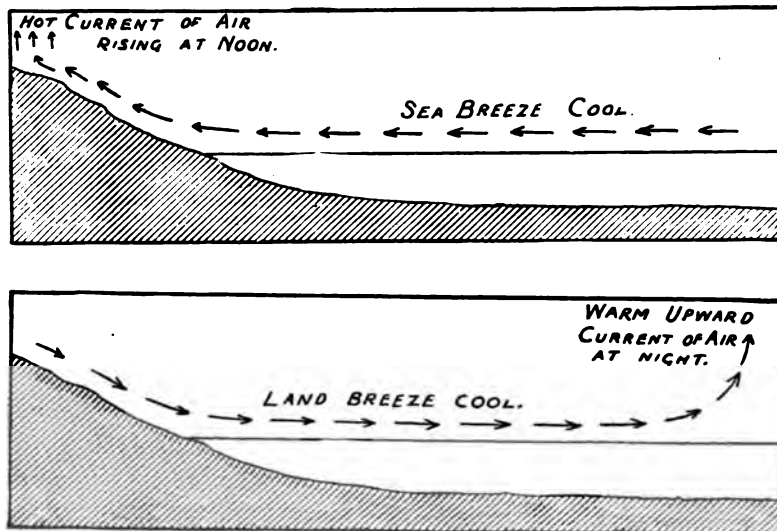
it wash? With what effect? Why is the climate of the British Isles in 60 to 70 degrees north latitude as mild as that of the Atlantic States in 35 to 40 degrees? What coast of North America is made warmer by an ocean current than the interior in the same latitude? What coast of Asia is affected by a cold current? What part of South America is cold and bleak because of Antarctic water and air currents?

The equatorial currents, both air and water, flow slowly westward. The earth turns from west to east, and as the water is free to move, and has come to the equator from more slowly moving parts of the surface, it flows backward, just as the water on a grindstone does when you turn the stone rapidly. This westward current, when it meets the continent of South America, divides into two parts, one flowing southerly, the other northerly, which helps to swell the current of the Gulf Stream.

In the Pacific Ocean the same thing occurs when the equatorial current strikes the islands between Asia and Australia.

#### NEARNESS TO THE SEA.

Since the water of the sea is free to flow from one part to another, and that of cold latitudes exchanges with that of warm latitudes, the sea is generally warmer than the cold lands and cooler



than the warm lands adjacent to it. Were there no such interchange, it would still require a much longer time to cool or warm the sea than the land; for while the surface of the land remains unchanged, that of the sea is constantly being renewed by the waters rising or being brought from lower depths by the disturbing action of waves. Moreover, heat rays upon the sea are not confined in effect to the surface, but their heat is diffused through several hundred feet of depth.

Which is cooler in summer, the land or the sea, and why? Which is warmer in winter, and why? Why are countries bordering upon the sea less liable to extremes of temperature than those of the same latitude in the interior of the continents. Why do snowstorms in the interior often become rainstorms when they reach the coast? Why does a breeze blow from sea to land on a summer day? Why does it blow from land to sea at night?

### MONSOONS.

When these land and sea breezes become seasonal they are called Monsoons. The most marked monsoons are those of southern Asia. Note the latitude and elevation. These two influences would make the land much colder in winter than the ocean, and the consequence would be a steady wind from these high elevations seaward. In summer where would the rays be vertical? Which would be warmer, the land or the ocean? Which direction would the wind blow?

### INFLUENCE OF SLOPES.

Which has greater heating power, perpendicular rays or slanting rays? Why? Which has greater heating power, rays that fall near or far from the perpendicular? Which would receive the greater amount of heat, a board lying level or one of equal area tilted toward the sun? Which will receive the greater amount of heat, a level field or one of equal area sloping toward the south? A level field or one sloping toward the north? What would be the effect on British America if the Mississippi River had its source near the Arctic Ocean? What would be the effect on Alaska if the Yukon River flowed south across the country? What, if the Mackenzie River had its source near the Gulf of Mexico? Notice the direction of the great slope in Eurasia, and state how it affects the climate.

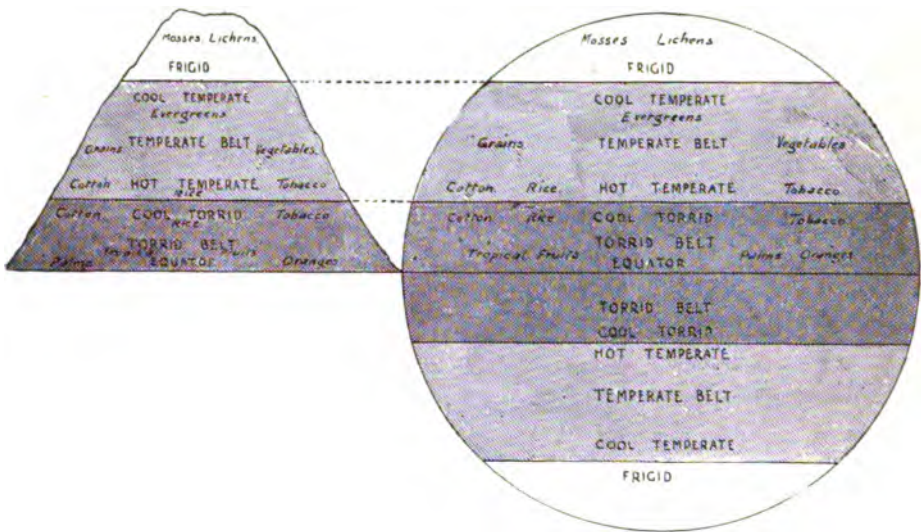
Hillsides and mountain sides sloping from the north are also protected from cold-air currents, which protection, added to the greater warmth of the sun's rays, makes these slopes very much milder than the surrounding country. How does the farmer make use of this in the planting of orchards, or vegetables for early market?

### INFLUENCE OF ELEVATION.

The high portions of the earth's surface, being farther removed from the changing currents of air from the sea surface, are much colder than low plains in the same latitude. As we ascend a mountain, too, we find the pressure of the atmosphere less and less. The heat produced by the sun's rays consequently finds more easy escape, while near the level of the sea the lower stratum of heavy air acts as a blanket to retain the heat. Up the side of a high mountain we can find all of the phases of climate, from that of the surrounding country to that of perpetual snow and ice. Many mountains

in the western parts of our country are capped with snow even in summer, while the valleys below them are blooming with flowers and rich with fruit.

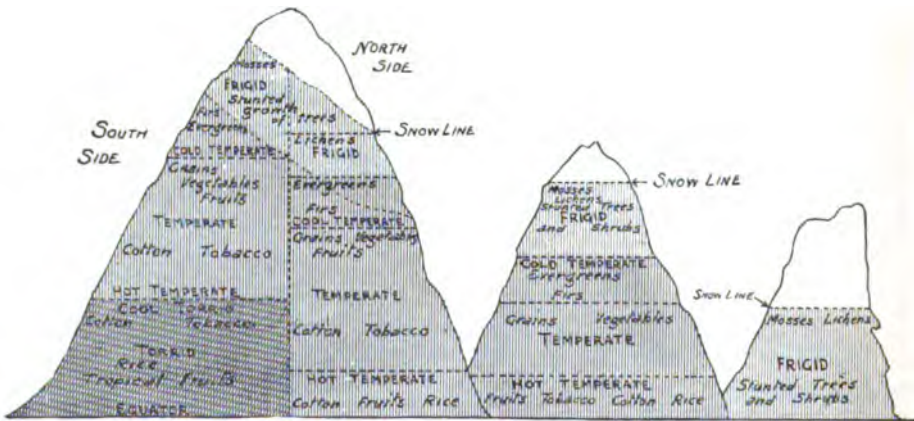
The Snow Line is the limit above which the snow never disappears. On which side of the mountain is the snow line lowest?



ZONES OF ELEVATION.

In which zone is it the lowest, the Temperate or the Torrid? Where does the snow line descend to sea level?

NOTE.—Local conditions often operate to make the valleys colder than the surrounding mountain sides, especially at night and in winter. The sides of the



mountains grow cold quickly, and cool the air in contact with them, which, becoming heavier, flows down the mountain sides into the valleys. In mountainous countries these streams of cold air flow through the valleys, combining and uniting as do rivers and glaciers. Why is there a heavy frost oftentimes in a valley and none upon the mountain side? Why are Swiss villages located on the mountain slopes rather than in the valleys?

## INFLUENCE OF SOIL.

Sandy or gravelly soils and rocky surfaces are poor conductors of heat; they are never warmed except through a few inches, but rapidly reflect the heat into the atmosphere, and readily radiate what they have as soon as the sun goes down.

The atmosphere in such localities becomes much hotter during the day than in those which have loam or clay soils. Why are cities hotter in summer than rural districts? Why is the sea-beach warmer than the adjacent meadows? Why do desert countries or dry districts have cool nights in summer?

## INFLUENCE OF VEGETATION.

Trees and plants are slow conductors of heat; hence, like bodies of water, they remain cooler than the soil during the day and warmer during the night. They help, therefore, to distribute the heat more

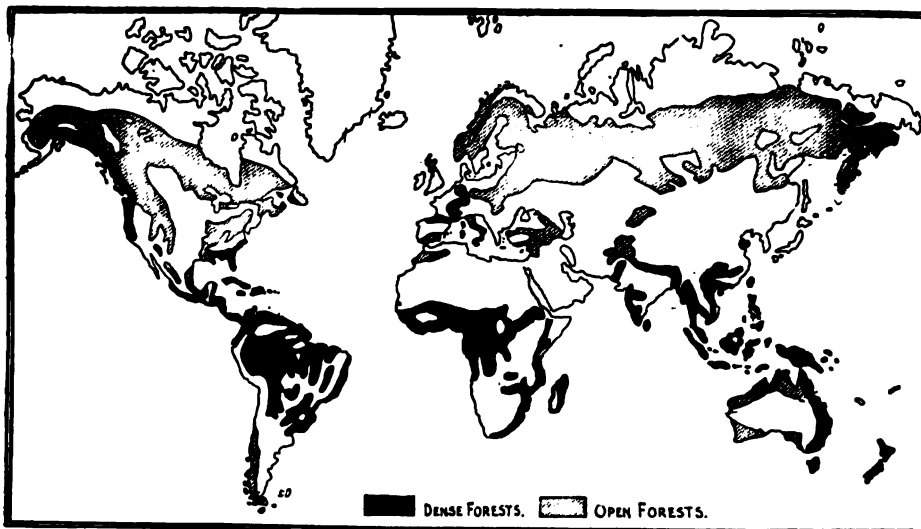


CHART SHOWING DISTRIBUTION OF FORESTS OF THE WORLD.

evenly over the twenty-four hours. Forest countries have a much more equable temperature than prairie countries. Forests, too, influence the temperature of the air through strata equal in thickness to the height of the forest, while the surface influences the lowest stratum only.

## MOISTURE.

The second great feature of the climate of a locality is the amount of moisture, or rainfall.

When heat is applied to water, some of it is changed to vapor. The steam from the tea-kettle is an example. This change of water to vapor is going on more or less all over the earth, but most rapidly where the heat of the sun is most intense. The warm-air currents flowing northward from equatorial and tropical regions are laden with this vapor. When they reach higher latitudes, or meet colder currents, it is condensed again, and falls as rain or snow. Cold mountain tops sometimes condense all the rain from these winds so that lands farther on in their course are entirely deprived of moisture. Why do the plains east of the Rocky Mountains receive little rain? Why does the southeastern part of North America receive abundance of moisture? Account for the Sahara Desert; the great rivers of India. Which is the rain-bearing monsoon, the northerly or the southerly?

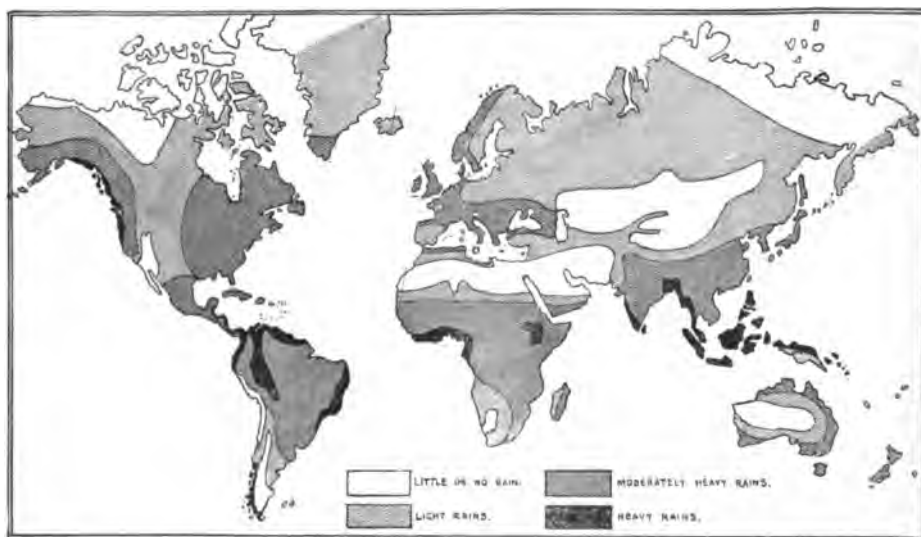


CHART SHOWING DISTRIBUTION OF RAINFALL OF THE WORLD.

Forests have the same influence that mountains have in causing the precipitation of moisture, only not to so great an extent. They also act as receptacles of moisture; the trees themselves absorb it; their roots penetrate the soil, loosening it and preparing it to receive the rain; dead roots and fallen half-buried trunks furnish passage-ways for its descent to greater depths into the soil; and the foliage provides a shelter from the rays of the sun. During a dry season evaporation will go on slowly from these forest stores with great

local benefit. What movements are being made for the protection of forests, and why? What effects are noticed where large forests have been cut away, as in the mountains of Pennsylvania? What effect upon springs? What effect upon river floods?

#### HEALTHFULNESS.

The third great feature in the climate of a locality is its healthfulness. This depends indirectly upon the other two features, heat and moisture.

In hot countries, where moisture is abundant, there is a great deal of decaying matter. If the country is low and badly drained, myriads of disease germs are propagated. Such countries are especially conducive to malarial fevers. Very hot regions give rise to yellow fever, which cannot exist where there is frost.

In cold, damp countries consumption is the prevalent disease. Pneumonia and bronchitis in localities that are subject to sudden extremes of temperature.

Poor drainage gives rise to diphtheria and scarlet fever. The latter prevails in dry seasons, the former more freely in wet seasons.

Mountain countries are in general more healthful than lowlands because the air is lighter and purer, and the drainage is so much more perfect that disease germs have little chance for existence.

#### LIFE.

All life of the world depends in a large degree upon the relief and climate, and varies with the changes in these influences.

#### PLANT LIFE.

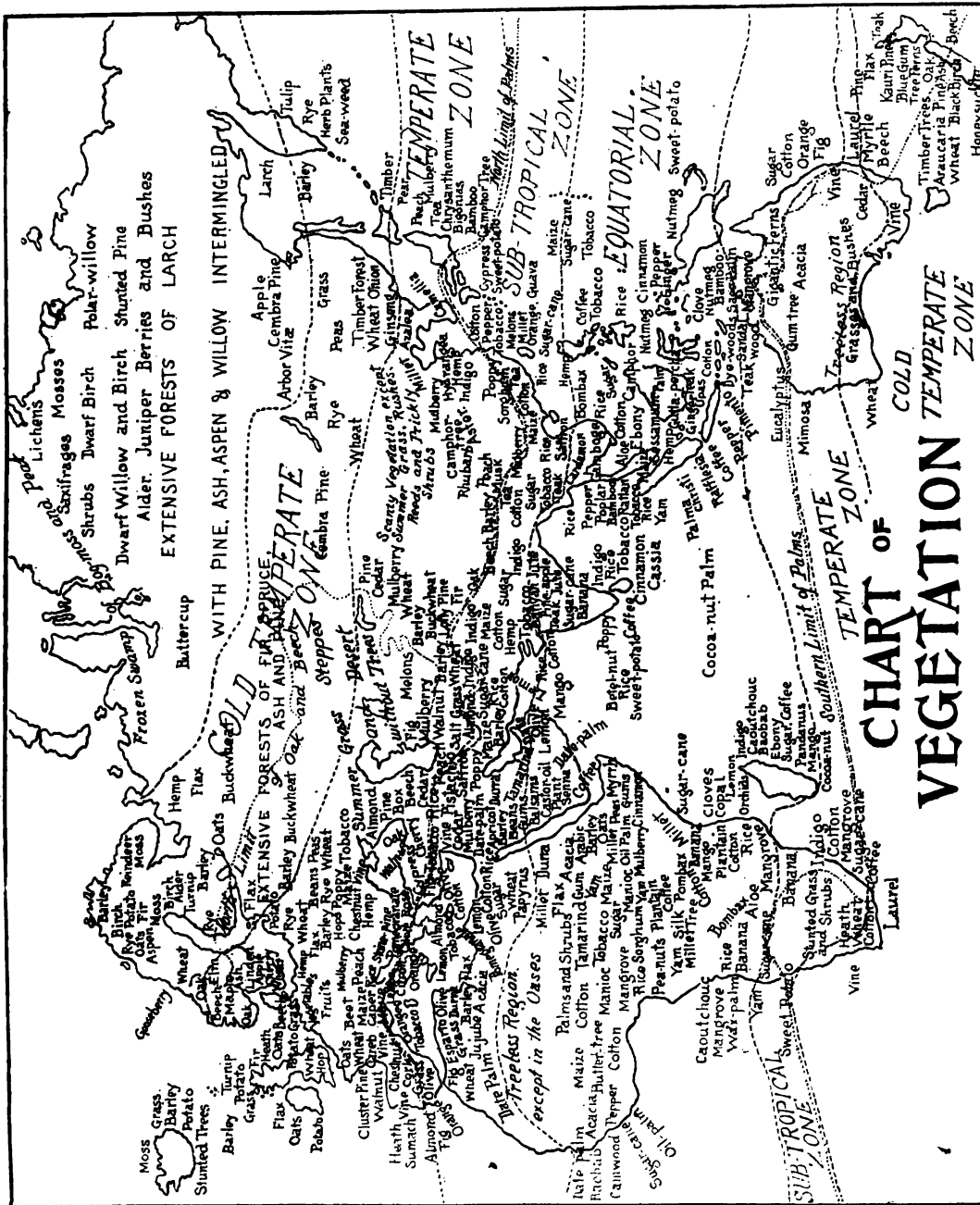
Plants and animals seek such conditions as best contribute to their work and the perpetuation of their species. In this they meet enemies, and it is an invariable rule that the stronger overcome and drive out the weaker. Many kinds of weeds and vines crowd out cultivated plants and grasses.

There is a great diversity of plant life from the equator to the poles. In the cold belt, and near the snow-line of high mountains in any belt, some of the lower forms of plant life only are found—such as mosses, lichens, and some wild flowers which blossom during the short summer.

In going from the cold regions to the equator, one would pass through several belts of vegetation, any of which may be modified by local conditions.

Just below the section in which mosses, lichens, and Alpine flowering plants are the only growth, is a narrow belt of stunted trees and shrubs. Here the ground is frozen to a great depth, the





# CHART OF VEGETATION TEMPERATURE ZONE



surface soil thawing only from one to two feet during the short, hot summer, which does not allow the trees to send out a vigorous growth of roots. These trees are of no use for lumber because of their short length of trunk.

Below this growth is the heavy forest region of both hemispheres, consisting in the northern limit of a belt of evergreens, merging toward the south into the more hardy, then the less hardy, of deciduous trees. This belt extends irregularly around the globe, and contains the great lumber regions of the world. The irregularity of the line is caused by the difference in elevation and the effect of the prevailing air and water currents.

In a broad belt of lowland and long gradual slopes, bounding the forest regions on the south, are the great grass, grain, and fruit sections of the world.

The hardy grains and fruits which reach maturity and ripen in the short summers are grown farther north than those less hardy and requiring a longer time to mature.

From the maps, pp. 70 and 71, tell what grains grow farthest north; farthest south.

The Indian corn grown in Canada is a variety which matures in six weeks, while that grown in Missouri requires a much longer season. Compare the time from blossom to seed of the apple with the orange and lemon; of wheat with rice; of barley with rice.

Which of our fruits require a short time to mature? Which require a longer time? From the map, name other fruits which grow in the same section as oranges.

In both hemispheres are vast grassy plains, where there is not enough moisture to assure successful agriculture and where forests do not readily grow. These are best suited to herding or grazing, and are the source of the meat supply and cattle products of the world.

The grain and fruit sections are suitable for agriculture. Find this section in South America, in Africa. In the semi-tropical belts, and approaching the equator on either side, are the cotton and sugar sections; the regions of coffee, spices, bamboo; and, in sections of great moisture, the luxuriant growth of tropical vegetation, the dense growth of trees and undergrowth of shrubs and vines, which form an almost impenetrable forest. A hot, unhealthful climate, with other unfavorable conditions, prevents these sections from being of any great value to mankind.

Locate this region in South America; in Africa; in Asia. What elevation modifies it in the southern part of North America?

In ascending a high snow-clad mountain in the torrid belt, what plants would you find at the base? What above these? Where would you find the forest belt corresponding to that of the Temperate Zone?

What changes in vegetation would you find in ascending a mountain in the temperate belt? What would be the difference in the plant life on the south side and that on the north side of a mountain? What would be the difference in vegetation on the outside and the inward side of mountains which bound plateaus?

What plant life would you expect to find on mountains in the cold belt? What effect has the winter of the temperate belt upon plant life? How are the plants and trees protected? Which live through the long, cold winters?

The northern and northwestern parts of Europe grow many plants which do not grow in eastern North America or Asia. Name them. The belt of forest trees extends farther north in Europe. What winds and what current produce this change?

**PLANT LIFE OF ISLANDS.**—Fruits, spores, and seeds are carried by the prevailing winds, by waves, and by birds from one land to another, until the plant life of most islands is the same as that of the nearest continent situated in like climatic conditions. The exceptions would be those isolated islands lying out of the course of prevailing wind and water currents.

#### ANIMAL LIFE.

Although animals seek the surroundings where they can best and easiest obtain subsistence and perpetuate their species, they seem readily to adapt themselves to climatic conditions.

They are constantly preying upon each other, and the strongest and fittest survive.

As man, the highest form of animal life, advances, native animals disappear, and only those remain which minister to his needs.

Animals seem to prefer the solitude of the forests and mountains in which to live and rear their young.

Most of our useful animals were domesticated from wild animals in Asia. Many of them moved westward into Europe with the people, and from Europe were introduced into America.

In what other way could the animals of Asia reach America? How could they migrate to Africa? To South America? How can animals reach the nearest islands? Why are the animals of Australia different from those of other continents?

Which can distribute themselves more easily, plants or animals?

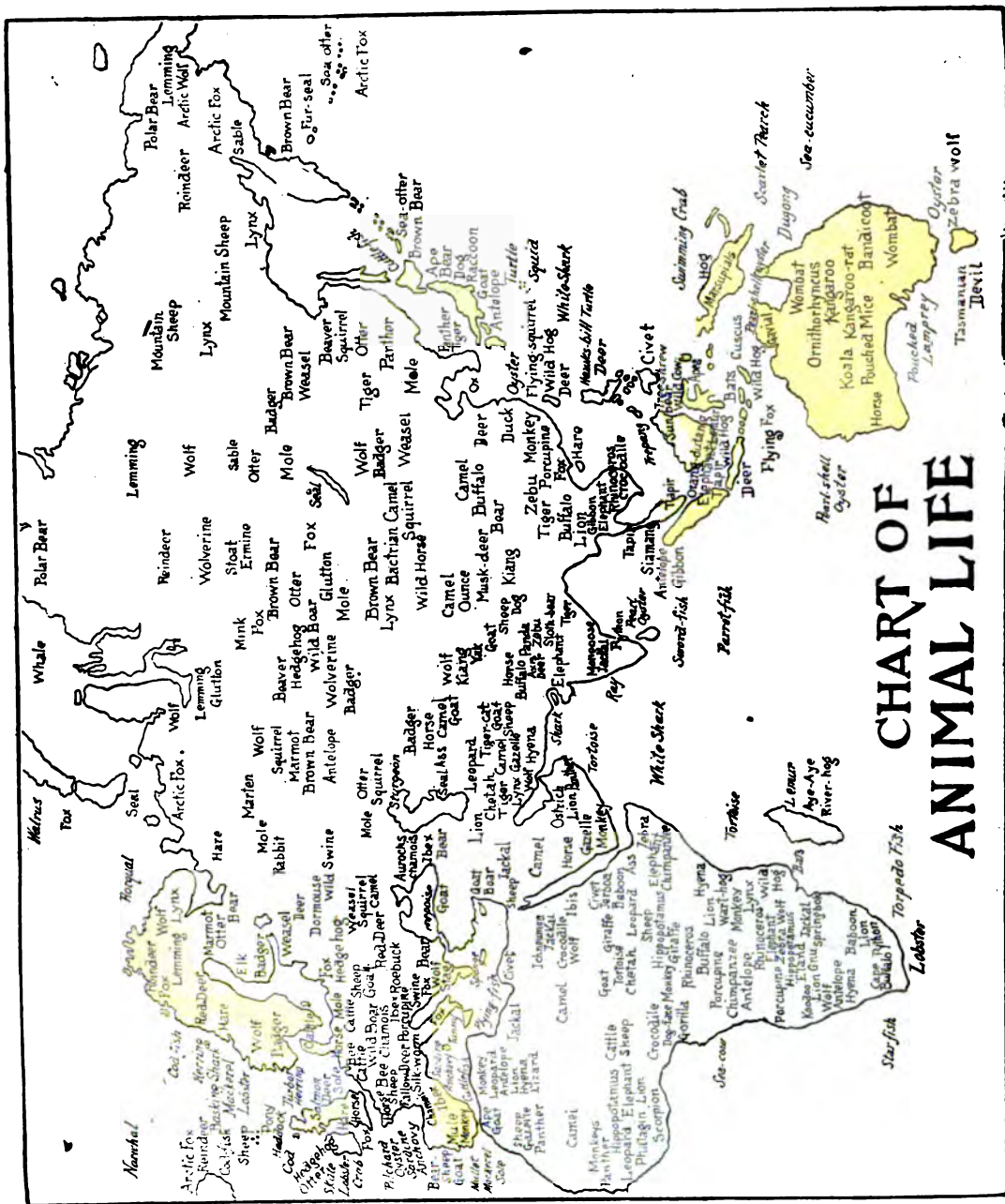
The polar-bear, musk-ox, walrus, whale, seal, narwhal, and reindeer are the largest animals north of the Arctic Circle. The natives depend upon them for food, fuel, and clothing. Which live in water? Which on land? What other animals in the Frigid Zone?

From the map, tell what wild animals are in the northern part of the North Temperate belt?

In going toward the equator what animals do you find in Eurasia? In North America? What large animals are in Eurasia that are not in North America? What ones in North America that are not in Eurasia? What ones in South America that are not in North America? What ones in Africa that are not in the other continents? What ones in Australia that are in no other continent?

Where do we find the small fur-bearing animals? Tell what you can of the home and habits of each of these. What occupations largely engage the people living in fur-bearing sections? Why do we find the grizzly bear among mountains rather than on the plains? In what belt are the largest animals of the world? Can you give any reasons for this?







minister to his needs ; yet, like the lower animals, he seeks localities best suited to his nature. Conditions too favorable yield little opportunity for the development of strength, sagacity, and ingenuity; while conditions too severe overtax his powers of endurance: hence, the North Temperate Zone has developed by far the most intelligent and largest number of people in the world.

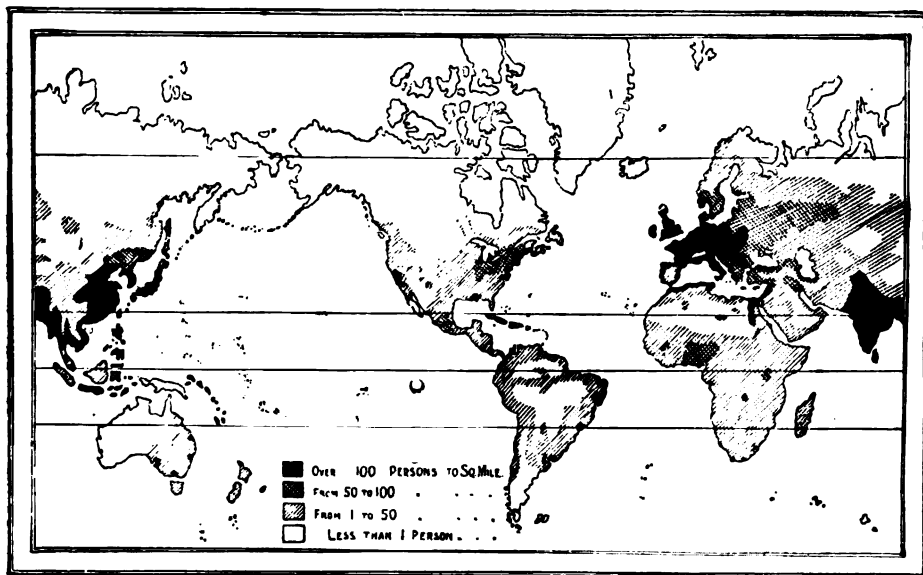


CHART SHOWING DENSITY OF POPULATION.

From the map, state which is more densely populated in the North Temperate belt, North America or Asia? What parts of North America are sparsely settled? Why? Why has the northern part of Europe more people than the northern part of North America? What part of South America is most densely populated? What parts are sparsely populated? Why is this?

What parts of Africa are thickly settled? What parts have few people? What reasons can you give for this? Where is the greatest density of population, among the mountains or on the lowlands? On the seacoast or in the interior? Why do we find more people in river valleys than among mountains? Why might savage people seek the mountain fastnesses? What different traits would be developed by life in mountain districts and life in lowland districts?

It is supposed that mankind originated from one common source, that he migrated in different directions, and that the different physical conditions, together with the different habits and customs which these conditions imposed, produced decided types in physical characteristics and language.

There are three distinct types or races of mankind—the White or Caucasian, the Yellow or Mongolic, and the Black or Ethiopic.

There is a great diversity among people belonging to either of the three races; but in certain features each is a distinct type not to be confounded with the others.

## RACES OF MAN.

	CAUCASIC.	MONGOLIC.	ETHIOPIC.
Skin: color and character.	<i>Whitish, Smooth.</i> (1) Florid, clear, and transparent. (2) <i>Pale-dusky</i> or swarthy; sometimes merging into light-olive, sometimes into various shades of brown.	<i>Yellowish</i> , passing into olive and almost every shade of brown; rough in texture; often a faded, washed-out look.	<i>Blackish</i> , sometimes a sooty black; soft, velvety, and cool to the touch; emitting a distinct odor.
Hair: kind and texture.	(1) Flaxen, red, light-brown; long, wavy, silky. (2) Black or dark brown; usually straight; sometimes curly. Beard.	A dull-black, coarse, lustreless; sometimes very long.  Beard scanty or absent.	Jet black, frizzled or "wooly," short; sometimes said to grow in tufts.  Scant or no beard.
Eyes.	(1) Blue, hazel, or brown. (2) Large, black, and bright.	Black, almond-shaped, slightly oblique.	Large, black, round, prominent with yellowish cornea.
Other features.	Both—A long, straight nose; small mouth; thin-lips; regular, oval features.	Very small concave nose; large cheek-bones; generally broad, flat features, sometimes (American Indian) hatchet-shaped.	A broad, flat nose; thick, everted lips, showing the red inner skin; high cheek bones.
Stature.	(1) Tall; above the average—5 ft. 6 in. to 5 ft. 10 in., and often 6 ft. (2) Below average.	Generally short; below average—5 ft. to 5 ft. 6 or 7 in. American branch often very tall.	Tall; rather above the average.
Figure.	(1) Powerful, brawny frames; strong. (2) Active, lithe, with much staying-power.	Heavy, squat, often angular frame.	A large bony frame, stout, robust, but weak in lower extremities.
Temperament.	Imaginative, active, enterprising, practical. (1) Somewhat stolid, serious, persevering. (2) Fiery, impulsive, not steadfast.  Science, art, and letters highly developed in both (1) and (2).	Sluggish, somewhat morose, passive; little initiative; great powers of endurance; subject to great outbursts.  Science, art, and letters only moderately developed.	Unintellectual, sensuous, cheerful, but fitful, passing easily from comedy to tragedy; affectionate and cruel.  Science, art, and letters undeveloped.

It has been customary to classify the American Indians and Oceanic Malays into two other distinct races, but the latter are now considered as a recent modification of the Asiatic Mongolic group, and the former as a more remote branch of the same. How did the Indians find their way to America?

*Ethiopic.**Mongolic.**Caucasic.*

RACIAL TYPES.

The Caucasian group formerly occupied western Asia, Europe, and North Africa, on the border of the Mediterranean, but it has in recent times spread over the whole of North America and South America, southern Africa, and Australia.

It is interesting to note that the northern branch of this group is pushing out, with an indomitable spirit, to conquer, people, and civilize the whole world. They lead in promoting all the influences for the uplifting and betterment of mankind.

The Mongolic group occupies the greater part of the Eastern Hemisphere, and before the discovery of America held exclusive possession of the Western Hemisphere. To it belong the Japanese, Chinese, Turks, American Indians, and Malays.

The Ethiopic group occupies the greater part of Africa and many islands of the sea. Because of the former extensive slave-trade, large numbers are now living in southern United States.

## STATES OF CIVILIZATION.

The different physical conditions which developed distinct races continued their influence. The habits and customs of each race became more pronounced. Some pushed forward to meet and overcome all obstacles, showing marvelous ingenuity in constructing whatever was necessary for this purpose, and thus learning to do more through the doing. Others made little progress, showed little ingenuity, and clung tenaciously to the customs of the past. There were still others who lived in the rudest manner, low down in the scale of humanity.

How are they classified? (See p. 27.)



It is believed that each class passes through these various stages of civilization before attaining the highest; that each has its savage state, or infancy; its barbarous state, or youth; its civilized state, or maturity; and, finally, that each in turn will have its old age, or decline.

The races of the past must have been lower and more savage than any races of the present day.

#### THE SAVAGE STATE.

Savage tribes usually inhabit warm countries, and live by hunting and fishing. They wear little clothing; they live in huts which are only leafy coverings, or in wigwams; they are usually cruel, and prey upon other tribes.

Formerly savage tribes lived in caves, wore no clothing, and fed upon roots, nuts, etc.; but now only a few tribes of Africa, North America, and the islands live in this way. They learned to fight with bows and arrows, to hammer their arrow-heads from stone, and to make their bows and boats.

#### THE BARBAROUS STATE.

The next state of progress was shown in the making of better homes, still wigwams and huts, but constructed with more ideas of comfort; the providing of food for winter use, which led to the domesticating of such animals as could aid in providing it; and the making of rude vessels of pottery and other utensils, needed for use in cooking.



HUTS IN CENTRAL AFRICA.

Continued progress brought about agriculture in its simplest state, in the raising of wheat in the Old World and of Indian corn in the New.

With each advance came the need for tools. More knowledge of material and the working of it was gained by using what was at hand. The utilizing of stone for arrow-heads, hammers, mortars, and grindstones led some tribes to discover other uses for rough, and then for polished, stone. In using these materials from the earth, useful metals were discovered, which led to still further progress.

The barbarians of the present, none of whom can read or write, are the Alaskans; some of the Indians of North America, especially those of Central America; the Indians of South America; the Mongolians of northern Asia, and some of the islands; and many of the negro tribes of Africa.

Most of the barbarous people are in the extremely hot or cold portions of the world.

#### CIVILIZED STATE.

Neither the intense cold of the Frigid Zone nor the intense heat of the Tropics are conducive to the highest civilization and culture; but in the temperate belts, especially the North Temperate, we have the conditions suited to the highest state of civilization.

THE ARYANS, a race speaking a common language, are the earliest people of which we have distinct knowledge; although, as its branches went out into other parts of the world, they found another race of people, usually of a lower order in civilization. The Aryans are supposed to have sprung from Western Asia.

#### RELIGION.

All mankind, from the lowest savage to the highest in civilization, have certain rites and ceremonies in regard to their dead, certain ideas in regard to a future state, and personify some object or intelligence which they worship as a Great Spirit.

PAGANS worship the sun, fire, images, and animals. In very early times there were more Pagans than at the present day. For 2000 years B. C. people belonging to the highest civilization worshiped many gods, representing different elements or sentiments in the world. There was a God of War, the God of Love, etc. Pagans represent about one-seventh of the human race at the present time, and are to be found among the black and yellow races.

THE JEWS believe in one God, Jehovah, and that he revealed himself through his prophets who were "chosen of God." They believe in the Old Testament as the record of his revealed religion to them. The Jewish religion existed in western Asia more than

THE CHRISTIANS believe in Jesus Christ, the Son of God and the Saviour of mankind. They believe in both the Old and the New Testaments of the Holy Bible. The spirit and teachings of Christ are gradually permeating and influencing all races of the world, and Christians are living in all countries. The Christian Church is divided into Roman Catholic, Greek Orthodox, and the Protestant, which embraces different sects.



**The Christian era dates from the birth of Christ.**

This religion has spread into northern and north-eastern Africa, western Asia, and many islands of the sea. Its only foothold in Europe at present is in the possessions of Turkey. About one-ninth of the human race are Mohammedans.

**BRAHMANISTS.**—One of the Aryan branches migrated into India, where there was found another people of different type and lower civilization. These the Aryans conquered and made slaves.

The people of this Aryan branch, known as the Hindoos, were very proud of their descent and fine physical features, and wished to preserve their purity of race. To do this, they tried to prevent their people from marrying outside of this branch. In this they did not succeed, and soon distinct classes were formed—the pure-blooded Aryans being of the highest, the slaves the lowest, and the mixed blood belonging to intermediate classes. This led to a system of religion based upon *castes*.

There are four principal castes. Only members of the highest caste are allowed to be priests or Brahmins, and to offer sacrifices. To the second caste belong those of mixed blood—the rulers and soldiers; to the third caste, also composed of mixed blood, the tradesmen belong; and to the fourth, the servants, or slaves.

Brahma is one of the principal gods of this religion, and the people who believe in him are Brahmanists. This is the oldest known religion in the world, and includes about one-half of the people of India and one-tenth of those of the world.

**BUDDHISTS.**—About 500 B. C. there arose a great religious reformer, a prince living near the Ganges in northeastern India. He declared that penances, fasting, and sacrifices were of no use; that caste was not religion. He promised that for all who would accept his teachings, distinctions of caste should vanish.



BUDDHIST PRIEST.

He was called Buddha, "The Enlightened One." The religion was called Buddhism, and the believers were Buddhists. Buddha did not believe in God. He taught that one man is better or worse than another according only to the purity of his thoughts and deeds. This was advanced thought compared to Paganism or Brahmanism.

At first Buddhism spread with great rapidity. It has to-day more followers than any other religion. It has been driven from India, its birthplace, except among a few northern tribes, but holds full sway in Ceylon and Indo-China. It is mostly confined to the Mongolians of Asia, claiming among its adherents all of Tibet and Mongolia, more than half of China proper, the people of southern Siberia, many Japanese, and the Tartar tribes on the Volga River in Europe.

## GOVERNMENT.

**PATRIARCHAL AND TRIBAL.**—In all games and in families from earliest times, there have been rules of government. Very early in the history of the human race there were leaders and recognized heads of families. Often this head of one family became the leader and adviser of several, all descendants of the same family branch. Such groups of families were called tribes. Savage races constituted themselves into tribes of mixed families, and each tribe was governed by a chief whose authority was absolute.

As the race progressed, man owned property and had certain rights and privileges to be protected. The chief selected a few men, who had in some way distinguished themselves, to become his advisers, and they sat in council to decide the vital questions at issue in the tribes. This is the government of the savages inhabiting the earth at the present day. Such tribes are among the less civilized of American Indians, the blacks of Africa, and the branches of the blacks and Mongolians inhabiting many islands.

**NATIONAL.**—In ancient times one tribe often went to war with another over disputed questions as to the ownership of property. The conqueror became richer, while the conquered became poorer, making a class distinction between the rich and the poor. The richer became more powerful and founded nations.

There are many nations, belonging to each of the three races. They live under different forms of government. Do you know of any nations belonging to the white race? To the yellow race?

**ABSOLUTE MONARCHY.**—Among some nations, the same as among some tribes, the ruler is absolute. Such a government is known as an **ABSOLUTE** or **DESPOTIC MONARCHY**. The ruler, with a few chosen counselors, makes all the laws and executes them. Such rulers are known by the name of Czar, Sultan, Shah, Ameer. This is the form of government in Russia and European Turkey, and in all the countries of Asia excepting Japan and India.

**LIMITED MONARCHY.**—As people became more advanced in civilization, they became dissatisfied with giving one man absolute power; so the ruler's power became limited by such laws as were made by a body of men representing both the higher and lower classes of people. Such a government is a **LIMITED** or **CONSTITUTIONAL MONARCHY**. The ruler is known as King or Queen, Emperor or Empress. Such a ruler holds his position from right of birth, or heredity. Japan and India and all of the countries of Europe excepting Russia, Turkey, France and Switzerland have limited monarchies.

**REPUBLIC.**—As people made further progress, each individual wished to have a voice in the government of the nation. Such a government is a **REPUBLIC**. The ruler of a republic is chosen by the people from among the people, and is called a President.

All of the countries of South America, excepting Guiana, are republics. All of the countries of North America are republics.

excepting Balize (a small colony in Central America) and Canada, which belong to Great Britain; Greenland and Iceland, which belong to Denmark. In Europe, France and Switzerland are the only republics.

### MINERAL BODIES.

Unlike plant and animal life, mineral bodies do not depend upon relief and climatic conditions for their distribution. All life is dependent, however, upon various mineral substances.

In the disintegration of rock masses, certain mineral substances find their way into the soil and are taken up by all plant life. Animals take it in through their food and water.

The mineral matter forms the hard structure in leaves, plants, and trees, and is left in the ashes that are the result of burning. Mineral matter is very necessary in building the bones and teeth of all animals.

Mineral bodies are not confined to belts or sections, but are often found on or near the surface in lowlands, in the sandy beds of rivers, and deeply imbedded in the earth's crust.

**METALS.**—The metals are gold, silver, platinum, mercury, iron, lead, copper, tin, zinc, nickel, antimony. The first two are called **PRECIOUS METALS** and are usually found in a native state, though often alloyed with each other. **PLATINUM** is usually native. **COPPER** is often found native. The other metals are found in **ORES**.

From the map, tell in what hemisphere and in what parts of the different continents each metal is found.

What is the business of the people living in these sections? What kind of cities or towns are built? In what way do these cities and towns help the farming sections? Mention some of the industries which grow out of the mineral products.

Bring in specimens of each metal for class observation.

**BUILDING STONES, FUELS, ETC.**—Building stones are usually quarried from rock ledges.

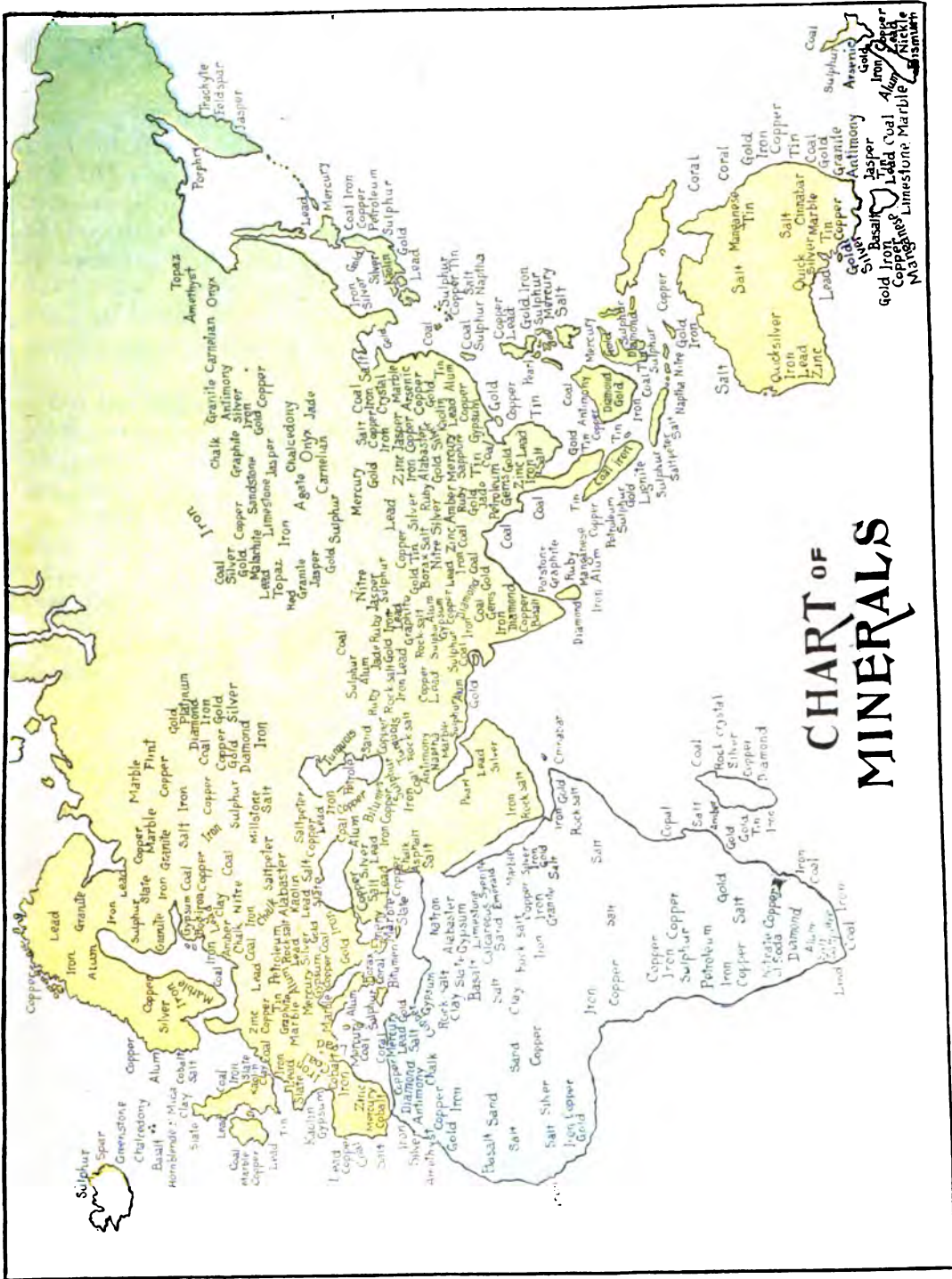
The **LIMESTONES** are a very useful and widely distributed group. They form the **MARBLES** of the world. Mention their uses. They are soft and easily decay from weathering.

**GRANITE**, which consists of the minerals, quartz, feldspar, and mica, sometimes a little hornblende, is one of the best, most rugged, and imperishable of building stones. The stratified variety, known as **GNEISS**, is more commonly used. Why? Tell as many uses as you can for granite. Which mineral decays first? What becomes of each as it decays? Bring in specimens of the stone and the minerals which compose it.

**SANDSTONES** are composed of coarse and fine sand, sometimes mixed with gravel, which have been cemented together in layers. They are of different colors, and most of them are very durable. Bring in specimens. Tell where you have seen them used.







# CHART OF MINERALS



**CLAY**, which is found in beds, came from the decomposed feldspar and hornblende of granite. It is made into tiles, pottery, brick, drainage pipes, etc. Clay beds which have been under great pressure form **SLATE**. Tell as many uses as you can for slate. Bring in specimens of clay and of slate.

**THE COALS.**—Coal beds were formed ages ago from the pressure and partial decay of large beds of **PEAT** which had formed in marshes. The first change from peat was to **LIGNITE**, a kind of brown coal. From lignite it gradually changed to **BITUMINOUS**, or soft coal. With added heat and pressure, the bituminous changed to **ANTHRACITE**, or hard coal. With continued heat and pressure, it became **GRAPHITE**, a pure carbon, which will not burn. All of the coals are used for fuel except graphite, and all are found in large quantities throughout the world. Locate the coal regions. Bring in specimens of coal.

**PETROLEUM**, or Rock Oil, is found in the deeply stratified rocks of all ages. It is made into kerosene, lubricating oils, naphtha, paraffin, and other valuable products. Locate petroleum districts. Rock oil is supposed to have formed from decomposed animal and vegetable matter and to have collected in pockets in the rocks.

**ROCK SALT**, a very useful mineral substance, is widely distributed through stratified rock. It is believed to be a deposit in some lake- or sea-basin from which the water has evaporated. Locate salt mines or beds.

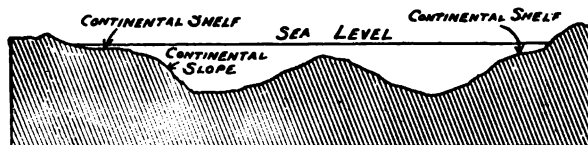
## THE SEA.

What is the sea? How much of the earth's surface does it cover? What are its large divisions called? How many are there? Name them. In which hemisphere is the greater part of the sea, the northern or the southern? The eastern or the western?

The waters of the sea are about  $3\frac{1}{2}$  per cent. salt. The saltness is greatest at the equator, where the evaporation is most rapid. Why?

### DEPTHS OF THE SEA.

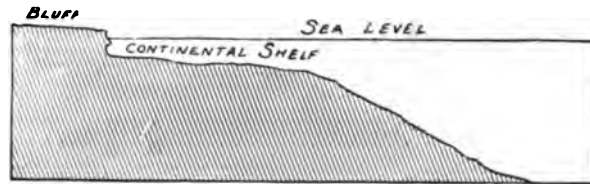
The bed of the ocean does not present such irregularity as does the land surface; it is made smooth by the action of water. The depths, however, show even greater range than do the heights of



land. The greatest known depth is in the south Atlantic, where soundings have been made to about nine miles in depth. In the north Atlantic, there is a broad elevation extending from Newfound-

land to Ireland which is called the Telegraphic Plateau. Upon this the first Atlantic cable was laid. Nowhere upon this plateau is the depth greater than 400 fathoms.

Near the continent coast-lines in most places the sea is shallow, the depth increasing very gradually for some distance upon what is called the *continental shelf*; beyond this it drops very rapidly to



a depth of 1000 fathoms or more. The continental shelf and the shore islands, which are its elevations above sea-level, are really a part of the continental land mass and are gradually being redeemed from the sea. On the Atlantic seaboard, the continental shelf is generally broad, corresponding to the long slope of the continent; on the Pacific seaboard, it is narrow, corresponding to the short, abrupt slope of the continent. Southeast of Asia is an extensive shelf connecting with Australia and bearing many islands.

#### ISLANDS OF THE SEA.

Islands are formed in various ways: Some of them are as old as the continents themselves, and have had a similar origin; they are indeed small continents. Some have been raised above sea-level by the slowly rising ocean bed. Some are the sentinel highlands of coasts that have been submerged. Submarine volcanic action has thrown up islands in mid-ocean, and many volcanic cones are still below sea-level, which may some day rise above it.

Islands are also of coral formation, built up by the deposit of animal matter, which is afterward broken and pulverized into soil by the erosive action of waves. Coral animals cannot live at a depth greater than 120 feet; hence, coral islands must have been raised to that level by some other agency.

Corals often form *reefs* along the shores of other lands. A reef is a long stretch of land formation at some distance from the mainland, from which it is separated by shallow water. Many of the Pacific islands have coral reefs along their shores. The most extensive reef formation is Great Barrier Reef, northeast from Australia. The peninsula of Florida is largely of coral formation and is fringed with reefs.

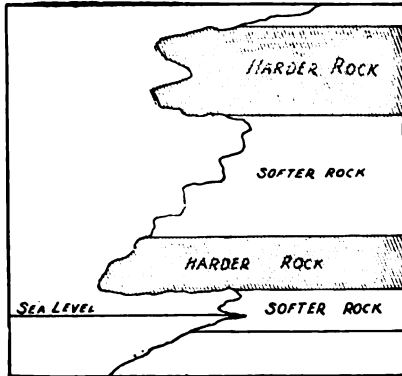
An **ATOLL** is a ring-shaped island inclosing a lake or lagoon. An **ARCHIPELAGO** is a group of islands.

#### MOVEMENTS OF THE SEA.

The general movements of the sea are of three kinds: waves, currents, and tides.

*Currents* have been treated under climate.

**WAVES** are surface movements caused by any disturbing agent, most commonly by the wind. They vary greatly in altitude, some having been measured which were thirty to forty feet high.



ACTION OF WAVES.



WAVE-WORN CLIFFS.

*Experiment.*—Toss a piece of wood upon waving water, and note that wave after wave will pass, merely lifting the wood and letting it fall again. This



HOW WAVES APPROACH THE SHORE.

shows that a wave is only the rising and falling of the water. There is a slight movement in the direction traveled by the wave, which indicates that the upper part of the wave moves forward a little.

Waves tend to form in long lines at right angles to the course of the wind. They break upon a shore, however, in a line nearly parallel

with it, no matter what their direction out at sea. In moving along a shore, the portion of the wave nearest it would be retarded by



PEBBLY BEACH : WAVE-BROKEN.

the shoal, and the portion farthest out proceeding more rapidly, the whole would swing around nearly in line with the shore.

When large waves reach shallow water the lower parts are held



*Perry Picture Co.*

MINOT LEDGE LIGHTHOUSE, SOUTHEAST OF BOSTON HARBOR.

back and the upper waters dash upon the shore in breakers. These breakers have great erosive power, wearing away capes and headlands and filling up bays and inlets.

Waves are great agents of erosion; by their action the shore lines are constantly changing. In many places where they beat upon rocky coasts they wear away the softer stratum of rock, undermining the rocks and soil above, which crumble and fall. On sandy shores, waves and winds whip the sand into mounds called sand-dunes. Outflowing rivers laden with silt meet sea waves which balance their movement, causing quiet water and a deposit of the silt; in this way sandbars, often islands, are formed at the mouths of streams. Mention some islands so formed.



A WIND-STRATIFIED SAND-DUNE

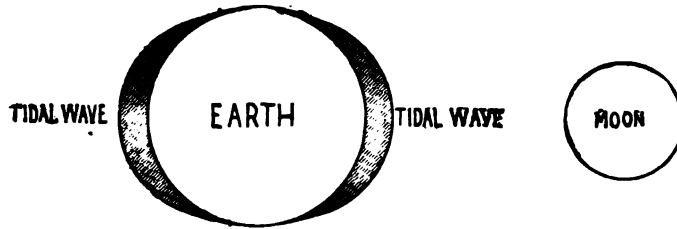
**TIDES.**—At the seacoast waves of high water are observed to succeed one another at regular intervals. It has long been noted that these intervals correspond with the time of the moon's passage. The cause is attributed to the attractive force which she has in common with every other body.

The force of gravitation with which a body acts is directly proportioned to its weight and inversely proportioned to the square of the distance through which it acts. Thus, a body weighing ten tons attracts with twice the force of a body weighing five tons, and the moon twice as far away from the earth would exert only one-fourth the force upon it.

The moon exerts her attractive force upon all portions of the earth; but the water, being free to move, is drawn together on the side next to the moon, forming the tidal wave.

Tides are observed upon all large bodies of water, even upon our largest lakes. The broader the expanse from east to west, however, the greater the tidal wave. Hence, while doubtless an inde-

pendent wave is produced in each ocean as the moon passes over it, the prevailing tidal wave takes its rise in the Pacific. Here it reaches its culmination and follows after the moon as rapidly as it

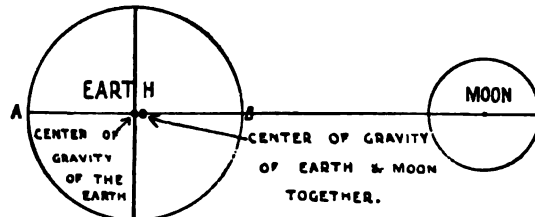


can. It does not reach the coast of North America until it is 36 hours old.

A tidal wave is also formed on the side of the earth opposite to the moon.

The explanation of this wave is more difficult. The earth and the moon together form a unit in the solar system. The earth, instead of revolving about its absolute center, revolves about the center of gravity of the earth and moon taken together. The center is outside of the absolute center of the earth.

The point *A*, opposite to the moon, will therefore revolve with greater radius than the point *B*, under the moon, and will consequently move more rapidly and throw the water more forcibly from the center, just as mud is thrown from a swiftly revolving buggy wheel. This tends to collect the water in a tidal wave opposite to the moon.



The sun also has influence upon the tidal wave. The sun does not attract the water with so much force as the moon, because it acts through such vast distance. When the sun and moon act together the highest tides are produced, called **SPRING TIDES**; when they act at right angles to each other, low tides result, called **NEAP TIDES**.

On ordinary open shores, the difference between high and low water is only five or six feet; but a tidal wave entering a broad mouth of an estuary, as it proceeds between narrowing walls, rises higher and higher until enormous heights are reached. In the Bay of Fundy the tides rise 50 to 60 feet. In the Bristol Channel they reach 40 feet.

## GLACIERS.

Glaciers are great rivers and sheets of ice which gradually flow from a higher to a lower level. They flow more rapidly in summer than in winter, more rapidly in the daytime than at night.

The glaciers of the cold countries extend to the sea, but those of the warmer regions extend down the slopes to where the melting equals the supply.

Like rivers of water, the surface ice in the middle of the glacier moves more rapidly than that on the sides or bed, because the



GLACIER OF MONTE ROSA.

friction of the ice against the rocky bed and banks tends to retard the flow.

These glacial streams of ice are formed by the union of many tributaries or feeders, in the same way that rivers are formed.

As these great ice-streams, sometimes several hundred feet in depth, push their way down the slope, they gouge great hollows and break off great masses of rock from the rocky bed and sides, many of which are broken and ground into fragments, while many boulders are carried for great distances down the slope to be left scattered over the land when the ice recedes by melting.

## MORAINES.

Just as a river leaves material along its banks, so this ice-stream is marked on either side by a line consisting of quantities of rock material and soil which has been broken and worn off and left in its icy trail. These are the Side or Lateral Moraines.

Where two streams unite, each having a lateral moraine, the left bank of one unites with the right bank of the other. The *débris* is united into a Middle or Medial Moraine.

As the ice melts back in summer, it leaves great heaps of this material in its track at the end of the glacier. These are End or Terminal Moraines.

If for any reason the climate becomes warmer in glacial regions, the ice melts and its retirement is marked by these moraines.

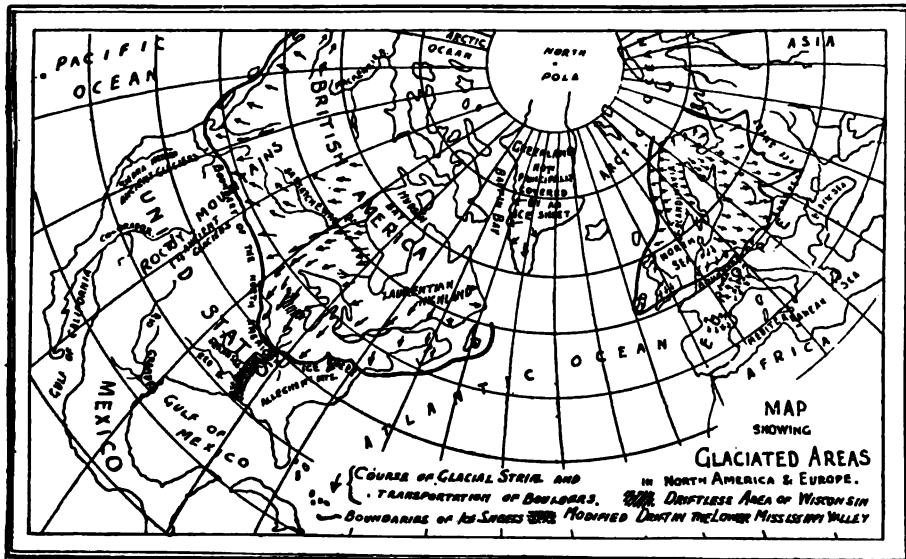
In many instances the accumulation of ice is so great that mountains and valleys are entirely obliterated and only the ice-sheet or -cap is visible. The ice-sheet of Greenland is of this character at the present time.

In other instances the mountain peaks stand out like sentinels in a sea of ice. In these the alternate action of heat and cold on the peaks causes their rapid disintegration, and the ice is strewn with the fragments.

#### CREVASSES.

These great moving masses of ice are subjected to great strain as they move over the rough surface. This causes them to break, forming great fissures called Crevasses.

The heat from the sun causes the upper ice to melt, and the water percolates through this mass, forming many streams, which



unite and form rivers underneath the ice. The water honeycombs the ice in many places, making it extremely unsafe for travelers.

As the ice descends into the warmer regions the heat from the land surface melts it more rapidly, and these waters unite with the rivers already formed. Hence, from every glacier there issue great streams of water carrying large quantities of sand and soil to lower



levels and to the sea. Many large rivers of the world have their sources in glaciers, and these rivers build great deltas. The Yukon of Alaska, the Ganges and Indus of Asia, and the Danube, Po, Rhine, and Rhone build such deltas.

In some instances valley glaciers descend directly to the sea, cutting and wearing deep, precipitous troughs in their descent. When the ice melts or the land becomes slightly depressed, the sea sets back into these long rocky bays, forming what are called fiords.

From the great amount of morainal material, bowlders, gravel hills, and drift, together with the scratches or abrasions on



A DRUMLIN—"JOB'S HILL" WHITTIER'S BIRTHPLACE.

rocks scattered over a vast area of North America and Europe, we know that the entire northern part of both continents was once covered by continental glaciers of great extent and depth.

The submerged plateau of which Ireland and the British Isles are the highest part was above sea-level, thus cutting off the warm ocean current which now flows between Greenland and Europe. The northern land of both hemispheres was much higher, therefore colder than at the present time. The climate was more moist.

The accumulation of snow on the mountain tops for one year had not disappeared when the precipitation of the next year began. After a few succeeding years of such accumulation, great streams of ice were formed which, through pressure and the force of gravity, found their way to lower levels.

Many streams united to form great sheets of ice, and the presence of so much ice made the climate colder, thus favoring an accumulation of great extent and thickness.

During this period all animal and plant life retreated southward. Some

Arctic plants are found now below the limit of the glacial drift that have not returned to their natural home.



AN ESKER.

After many, many years the surface of this northern section gradually subsided, the climate became warmer, and the glaciers receded, leaving quantities of



STRATA IN AN ESKER.

glacial material spread out over the country, telling us exactly the extent of the ice-sheet.

So much of this morainal material was deposited that the lower mountains were completely buried in some localities, and we have vast tracts of level and rolling land, prairies, known as till plains, the soil consisting of glacial drift or till.

Scattered over this region are many long elliptical gravel hills, known as *drumlins*, which were formed under the ice-sheet.

In some localities there are long winding ridges of hills trending in the same direction as the former ice-flow. They are composed of water-worn sand and gravel. These ridges often extend for scores of miles, and vary from fifty to one-hundred-fifty feet in height. They are called *eskers*, or *osars*, and are doubtless the deposit in the channel of glacial rivers, the sides of which were of ice.

In many localities there are irregular accumulations of water-worn sand and gravel. These form hills and knolls of various shapes, called *kames*, often having undrained basins between. Such hills inclose the basins of many small lakes.

#### LAKES.

There are thousands of lakes scattered over the northern parts of Europe and North America as the result of the glaciers. Upon drumlins, eskers, and kames are scattered many large angular stones,



GLACIERS, SHOWING MORAINAL MATERIAL AND LAKE.

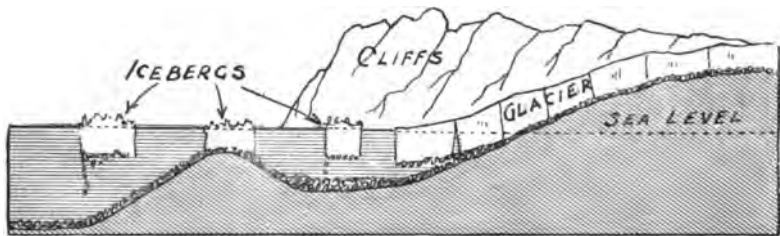
called boulders, which were deposited when the ice in which all these hills were formed, melted.

To-day there are great glaciers in the Himalayas of Asia; in Alaska and Greeland; on the northern sides of the highest peaks of the Rocky Mountains north of 32° in North America, and in the Scandinavian, Alps, Caucasus, and Pyrenees Mountains of Europe.

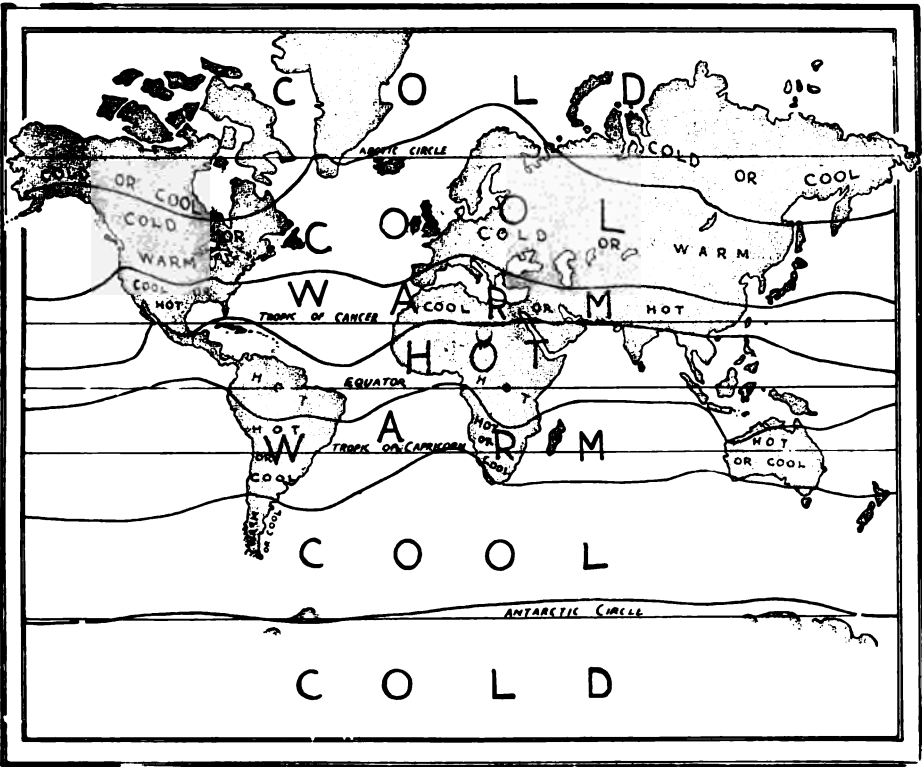
Find these mountains on the maps. Find knolls, hills, and boulders around the school house or your home.

ICEBERGS.

When the glacier flows to the sea, as in Greenland and Alaska, the pressure of the water underneath causes great masses of ice to break off, usually with a terrific noise.



These are icebergs and are often of immense size and dangerous for a vessel to meet. Only one-eighth of their entire bulk is above the water.



NORMAL TEMPERATURES AND SEASONS.

## NORTH AMERICA AND THE UNITED STATES.

### LOCATION AND OUTLINE.

What oceans surround North America? What continent southeast? What isthmus joins the two? What continent nearly touches North America on the northwest? What strait separates the two? About how wide is this strait?

What large island northeast? What groups of islands southeast? Locate Bermuda Islands, Newfoundland, Vancouver, Queen Charlotte Islands, Kadiak, Southampton. Name five islands in Arctic waters.

What two peninsulas help to inclose the Gulf of Mexico? What two help to inclose Hudson Bay? What peninsula and islands help to inclose the Gulf of St. Lawrence? What peninsula and gulf in the southwest? What peninsula in the northwest? What peninsula forms the most northern extent from the mainland?

Locate the following capes: Farewell, Race, Sable, Cod, Hatteras, San Lucas, Mendocino, Flattery, Prince of Wales, Pt. Barrow.

What strait connects Hudson Bay with the Atlantic Ocean? What channel with the Arctic Ocean? What sea south of the West Indies? What channel connects this sea with the Gulf of Mexico? What strait connects the Gulf of Mexico with the Atlantic Ocean? Where is Bering Sea? What strait connects it with the Arctic Ocean? What strait connects Baffin Bay with the Atlantic Ocean? What lands are separated by each of the above straits? What lands are separated by Denmark Strait? What strait between Vancouver Island and the mainland? What water does it connect with the ocean?

Let a line from Cape Sable, Nova Scotia, to the Pacific Ocean represent the average width of the continent, and a line from the Tropic of Cancer to the northern boundary represent the average length. In the latitude of Cape Sable a degree equals about 50 miles. A degree of latitude is about 69½ miles. From this representative rectangle compute the area of North America in square miles.

### SURFACE.

By reference to the relief map we observe that our continent, North America, has a general triangular shape. The Primary Highland, or Rocky Mountain System, extends throughout its entire length from northwest to southeast. The Secondary Highland, or Appalachian Mountain System, extends along the eastern side from northeast to southwest.

The wash from these old highland regions has gone on for centuries until the low plain occupies the space between. The large indentures, Gulf of Mexico and Hudson Bay, cover areas not yet redeemed from the sea. Across the middle portion of this Great Central Plain is a gentle swell called the Height of Land, which is the divide between the Mississippi River and the St. Lawrence Basins and the Hudson Bay Basin.

Seven well-marked surface divisions are presented.

1. **THE WESTERN HIGHLAND REGION.** This is a vast tableland upon which are many mountain ranges. In the north they may be regarded as a single system; the ranges are not high, but there are scattering peaks of great altitude. Farther south the mountains separate into two systems, the chief ranges continuing in the lofty and rugged Rocky Mountain System, while near the coast rise the Cascade and Sierra Nevada ranges. Between these two systems is an extensive highland basin containing numerous salt lakes, which, having no outlet, are the receptacles of its drainage. The principal one of these is Great Salt Lake. In the south, Mexico, the tableland reaches its maximum height, spurs of the Rocky Mountains forming its eastern border; on its western border is the chief mountain system of this part of the Highland, the Sierra Madre Mountains, among which are several active volcanoes.

Locate Mt. Logan (19,500 ft.), the highest mountain in North America; Vol. Orizaba, second in height; Vol. Popocatepetl; Mt. St. Elias, Rainier, Shasta, Longs Peak, Pikes Peak, all of which are over 14,000 ft. high, many having glaciers upon their slopes. How many miles high is Mt. Logan?

2. **THE EASTERN HIGHLANDS** consist of the Appalachian Mountain System and the Laurentian Plateau. These are the oldest highlands of the continent and have been worn away by the agents of erosion until their highest peaks are no higher than the plateau at the base of the western mountains. Locate Mt. Mitchell, Mt. Washington.

3. **THE NORTHERN PLAIN**, including the Mackenzie River and Hudson Bay Basins.

4. **THE SOUTHERN PLAIN**, or **MISSISSIPPI BASIN**, containing the longest river system in the world.

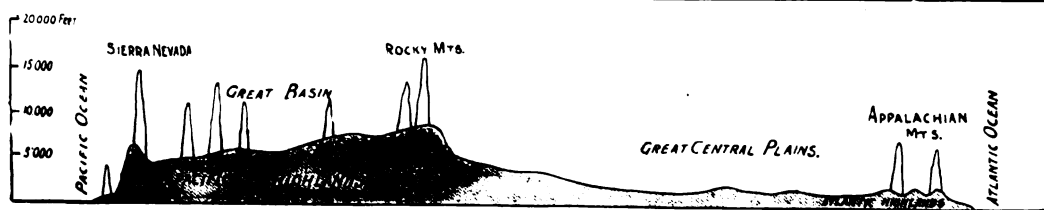
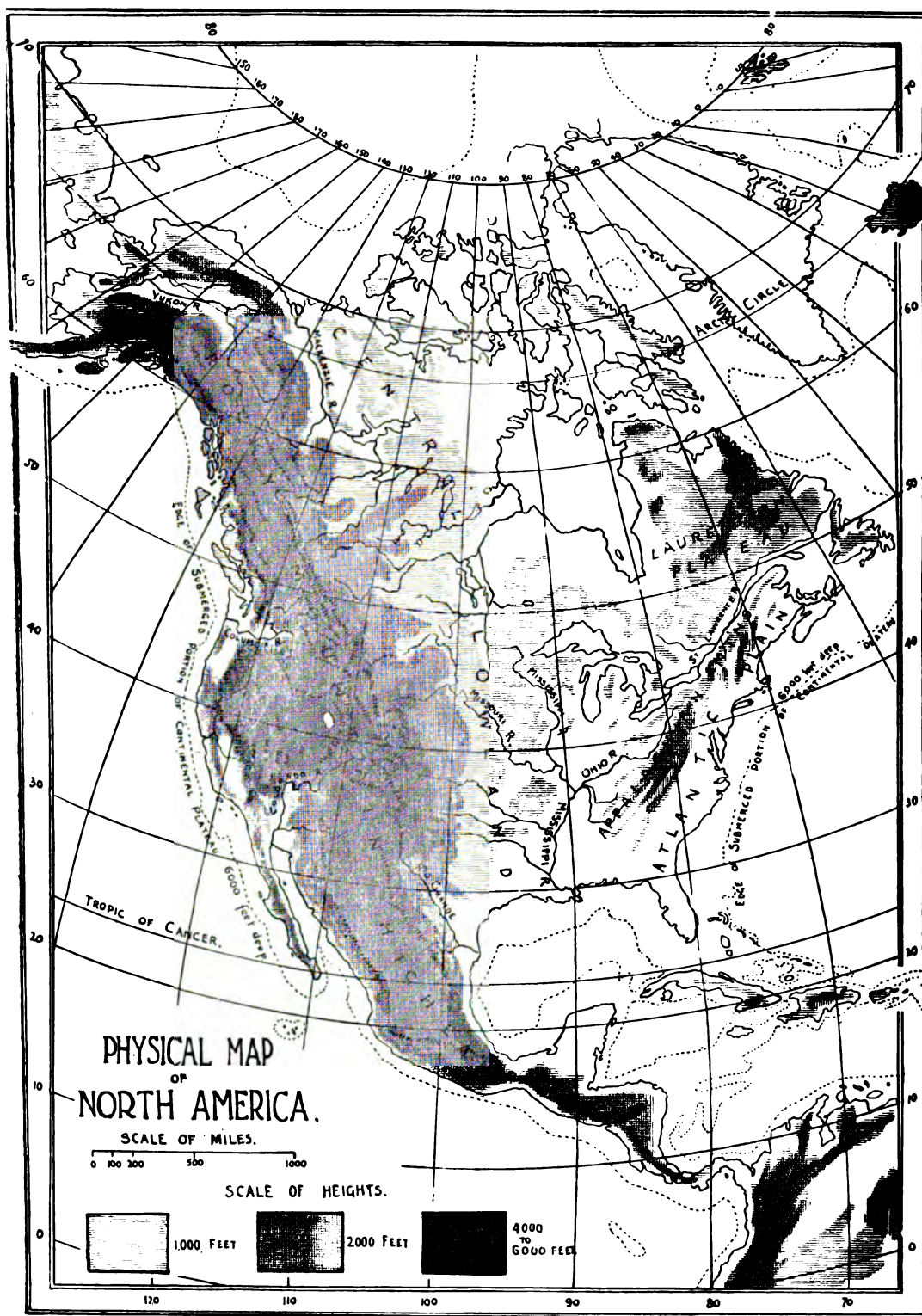
5. **THE ST. LAWRENCE BASIN**, including the Great Lakes. The river breaks through the Eastern Highlands, separating the Appalachian Mountains from the Laurentian Plateau.

6. **THE ATLANTIC SLOPE and COASTAL PLAIN.** This has been formed by the wash from the east side of the Appalachian Mountains. It varies in width from fifty miles in the northeastern part of the United States to more than three hundred further south. There is a distinct line of division between the low coastal plain of more recent alluvial formation and the more elevated Piedmont (Mountain-foot) Country, which is a rolling surface, growing more hilly toward the mountains. This division line is called the Fall Line, and is characterized by rapids and waterfalls in the streams, which are utilized for power. The Piedmont Country is also referred to as the Peneplain (almost a plain).

7. **THE PACIFIC LOWLANDS.** The slope from the Cascade and Sierra Nevada Mountains is very abrupt, most of the streams flowing into the Pacific being short and rapid. The California and Columbia River Valleys are the broadest parts of these lowlands. Along the coast is a range of low mountains, called the Coast Range. This range

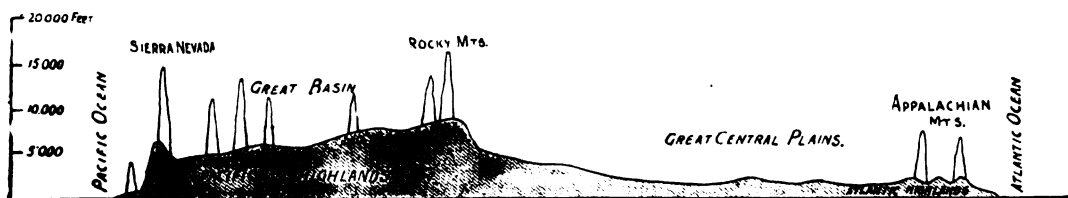
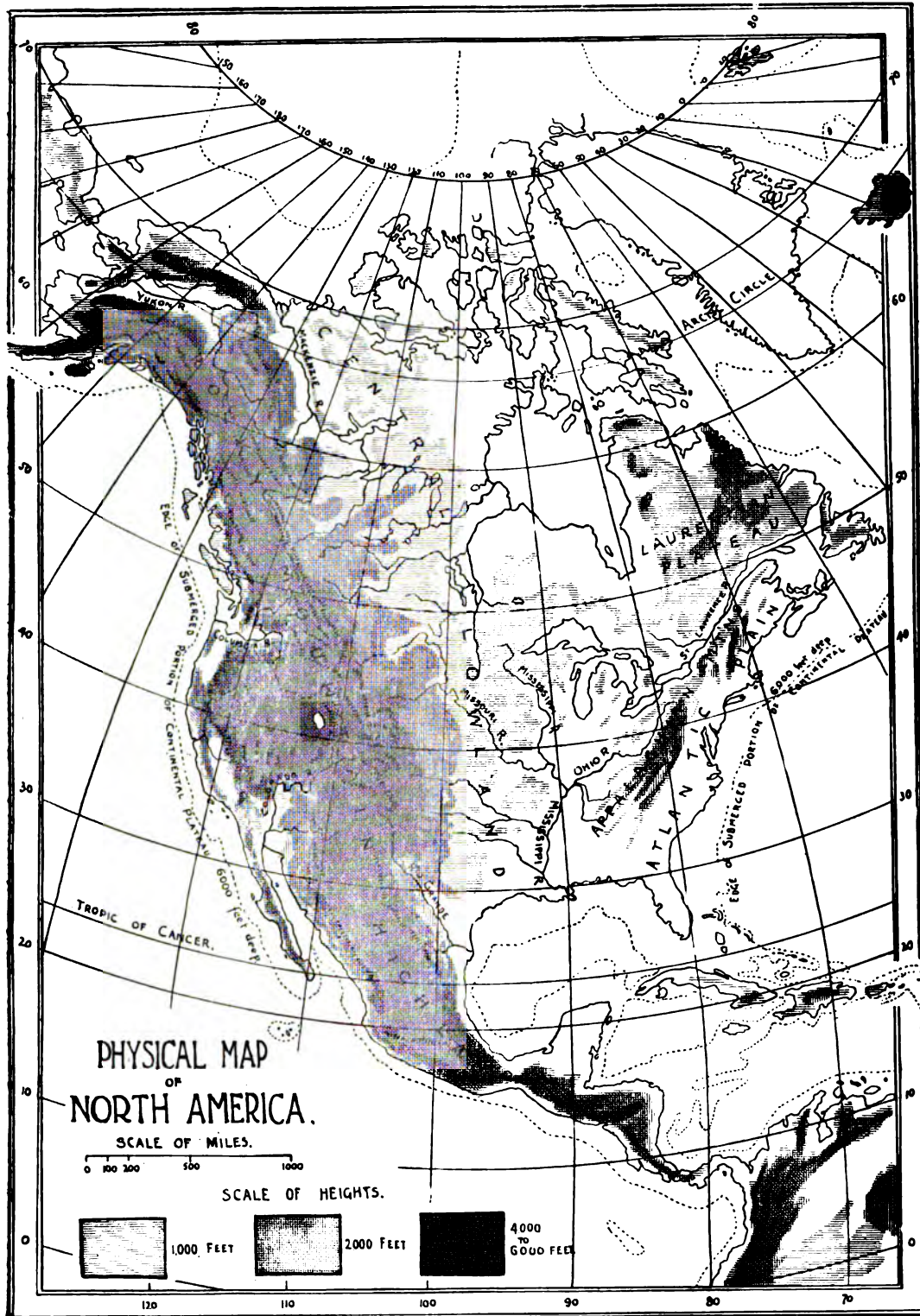












in its southern extent forms the peninsula of California, and the scattered islands along the coast of Canada in its northern extent. Notice the gradation: the continuous height of the peninsula, the alternating mountains and cross valleys of the middle portion, the mountain-top islands and ocean inlets at the north.

#### THE MISSISSIPPI RIVER.

Describe the Great Central Plain as to extent, general surface, mountainous districts, and direction of slopes. What river system drains it? Most of the plain was once a vast central plateau, which has been eroded and carried to a lower level or to the sea by this great river and its tributaries.

We know this from the remnants or "outliers" which are scattered like sentinels over some portions, and from the bluffs or escarpments which bound the river valleys.

The Mississippi River, taken with its largest tributary, the Missouri, is the longest stream of water in the world, being 4200 miles in length; it drains nearly one-third of the area of the United States, exclusive of Alaska. Trace the divides which limit its basin. Tell what basins are separated from the Mississippi by these divides. Between the mouths of what tributaries does the glacial boundary cross the Mississippi?

In the Mississippi, we have a good illustration of a river representing all stages of its life-history, from the falls and rapids near its source, in the young river, to the silted-up channel, high flood-plains, natural levees, and vast delta of a river in its old age.

The Mississippi was an old stream before the glacial period. During that time its work must have been enormous. Why?

For most of its course north of the glacial boundary it now has all the characteristics of a young river, flowing through a comparatively narrow, steep-sided valley bordered by precipitous bluffs of hard rock with rapids, lakes, and waterfalls near its source.

Southward from the glacial boundary the Mississippi flows through a valley from twenty to seventy miles wide, bounded on either side by high bluffs. This part of the river basin was once an estuary, or deep arm of the Gulf, which has been filled by the sediment brought down by the river.

As a river leaves its upper course or cuts its channel nearer to base-level, it loses the carrying power necessary to discharge its material into the sea. Therefore, every great river annually floods portions of the level land in its lower course and covers it with the sediment it gathers in its more rapid flow. These areas are called flood-plains.

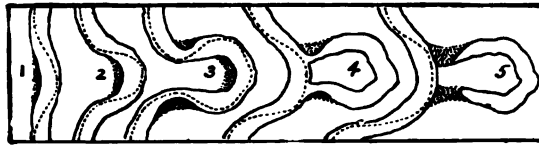
Upon what must the extent of flood-plain and amount of deposit depend?

Only at flood-time is the sediment carried to the flood-plain. At

all other times it is being slowly deposited in the bed of the river, the deposit being more rapid near the banks. Why? Thus, through many years, the bed of the river has been built or "silted up" until it is much higher than the plains on either side. The bank deposits are natural levees which keep the water within the channel.

For greater protection the government has built strong artificial levees or embankments. These are often broken during heavy floods, causing loss of life and property. Between the Ohio and the Red rivers extraordinary floods occur every few years, caused by the rapid supply of water from these great tributaries. Below the Red River the waters are discharged through the various delta mouths, called bayous, into the sea. The Atchafalaya River, or Bayou, threatens to become the main channel of the river (map, p. 123).

From the point where the natural levees are built, the Mississippi receives no small tributaries because they can neither flow up the embankment nor break through; so they turn and flow parallel with the main stream. Note the streams in the northern part of Louisiana, the Yazoo River and the Pearl River in Mississippi.



HOW OX-BOWS AND LAGOONS ARE FORMED.

The Mississippi delta is a great alluvial fan spreading out below the mouth of the Red River and building out into the sea at the rate of about one mile in sixteen years. It embraces an area of over 1200 square miles, and is several hundred feet in depth. It furnishes the most fertile soil for the cultivation of sugar and cotton.

The deposit in the channels at the entrance to the gulf blocked the paths of navigation until the *Jetties* were constructed by Capt. James B. Eads in 1874, which confined the channel to narrow limits. The great force of the water keeps the channel clear, carrying the sediment out into the Gulf, whence it is swept away by the Gulf currents.

In the long stretch of nearly a thousand miles through its flood-plain, the Mississippi meanders in and out in long swinging curves or loops called ox-bows. The channel or current flows close to one bank, cutting it away, and is deflected to a point below on the opposite bank, which is also cut away and deflects the current; thus the channel is deflected back and forth across the stream throughout its course.

As the water flows more swiftly on the outer curve, it eats away the bank rapidly, while the slower movement of the water on the inner curve deposits it and builds a small flood-plain. During floods the river flows with more force, and tries to straighten its course to the sea by cutting across the neck of some of these bows, thus leaving lakes or lagoons, curved in shape.



Look for eroded banks, ox-bows, and lagoons in the stream around your home or school. At what season do streams often change their courses?



PLAN & SECTION OF THE MISSISSIPPI VALLEY  
AT VICKSBURG.

At what season does the Mississippi do its greatest work? Upon which two tributaries must it largely depend for material? Why?



PICTURE SHOWING HOW OX-BOWS ARE MADE.

Which of these two appear to be doing the greater amount of work? The Mississippi is navigable to the Falls of St. Anthony, as the government has constructed ship-canals around the Rock Island and the Des Moines rapids.

Napoleon prophesied that this great river, flowing across parallels of latitude and penetrating to the very heart of a great continent,

would some time be the center of a greater civilization than the world had previously known.

#### CLIMATE.

Review general chapter on climate.

Between what parallels of latitude is North America? Where does the Tropic of Capricorn cross North America? Where does the Arctic Circle cross North America? In what zone does the most of North America lie? What kind

of a climate would you expect throughout its middle portion? What ocean and air currents strike its northeast coast? What effect would you expect them to have? What currents strike its northwest coast? What effect?

From what direction would you expect the prevailing wind to be in the central part of British America? What influence do the Rocky Mountains have on the direction of this wind? What States are affected by it, and how?

From what general direction do you expect the prevailing winds to be in the southern part of the United States? Why? What do they carry? Why? What effect do they have upon heat and rainfall in Mississippi, Alabama, Georgia, South Carolina, and Florida?

What effect in northwestern Texas, western Kansas, and Nebraska?

Compare the climate of the interior of Mexico with that of Florida. Explain the difference.

#### SOIL, FORESTRY, AND PRODUCTIONS.

The continent of North America has extensive forest regions and abundance of rich soil suitable for a great variety of productions.

Vegetation requires abundance of moisture, and is most luxuriant in warm zones. The large streams are skirted with forests in all parts of the continent. The Atlantic Slope, the Appalachian Highlands, the Gulf Plain, the region of the Great Lakes, and the Pacific Slope have extensive forests. The interior of the country abounds in vast treeless plains, called prairies.

Soil is made from decaying vegetation and the mineral substances which have been worn from the mountains by erosion. The mountain valleys, the coastal plains, and the great river plains have received the wash from the highlands, and thus have a deep, fertile soil. The prairies have grown rank grasses for ages which have decayed year after year, covering them with a rich mold. The territory immediately east of the Rocky Mountain System, being deprived of moisture, is very barren. It has been called the Great American Desert. Extensive tracts of country exist covered with alkali dust and no growth but the sage brush. How is it deprived of moisture?

The natural vegetation and cultivated products of the continent depend so much upon climate, that they may be designated by zones or belts. In the southern part, just north of the Gulf, where there is abundant heat and moisture, is the cotton belt. In the forests the chief timbers are live oak, palmetto, and pine. The belt about the latitude of the mouth of the Ohio River is the tobacco belt. Much black-walnut timber is found in the forests, together with a great many varieties of oak. The belt between the Ohio River and the Great Lakes is the corn belt. Maple and chestnut abound. Potatoes and hay are also staple crops. The region including the northern part of the United States and southern Canada is the wheat belt. Pines, spruce, and hemlock, in addition to the maple, oak, and chestnut, are found in the forests. These belts are not distinctly marked; the products of any one may be produced throughout the belt on either side, but can hardly be carried over to the second zone.

The mountain regions abound in mineral products. The Appalachian Highlands are rich in coal and iron; the upper lake region, in copper and a high grade of iron ore; the Ozark Mountains, in lead and iron; the Western Highlands, in gold and silver. Rich coal fields are found in all parts of the continent.

Some parts of the country have many rapid streams affording abundant water power. Those near the sea, affording easy means of commerce, and not being well suited to agriculture, contain extensive manufacturing plants.

#### POPULATION.

The various conditions studied so far all influence population. We would expect to find a dense population in a region where the climate is temperate and salubrious and the soil productive. All through the central portion of the United States we find a strong, intelligent population, and for this cause. Other influences, however, have operated. The early settlers found our eastern shore, and, knowing very little of the rich interior, were content to struggle with a severe climate and a rugged and not over-productive surface. Later this territory has maintained its dense population through the facility which its abundant water power offered for manufacturing industries, and its proximity to the sea for commerce with all parts of the world. The first has dotted the territory with thriving manufacturing cities, and the second has developed such great commercial centers as New York, Philadelphia, and Boston.

The discovery of gold in California in 1848 drew large numbers to that El Dorado, and San Francisco in a single year sprung from a hamlet of only 450 people to a great city.

The mineral wealth and the fine climate of Colorado have attracted large numbers, and Denver, as the center of its commercial interests, has become a thriving city.

Agricultural districts, too, must have their centers of trade. Thus Cleveland is the center for northern Ohio, Cincinnati and Louisville for the Ohio Valley.

What has made Chicago? Montreal? Omaha? New Orleans? Toronto? Minneapolis? Buffalo? Pittsburgh?

The original inhabitants of North America were the Indians and the Eskimos, branches of the Mongolic Race. The former comprised many different tribes, mostly savage, presenting great variations in habits and language. They lived mainly by hunting and fishing, tilling the soil in a rude and limited way. They have gradually yielded to the onward march of the descendants from the Europeans, who settled upon the eastern coasts at the beginning of the seventeenth century. The number of Indians now in the United States is about a quarter of a million. These are scattered over the country, mostly west of the Mississippi River, living on reservations, where they keep up their tribal organization and are supported mainly by the United States government.

The Indians in the extreme southern part of the continent have left evidences of civilization. There are remains of temples, implements, and utensils indicating considerable advancement in mechanic arts. The Maya group of Central America were the most advanced. They lived by means of agriculture, understood the art of writing,



and have left many books and records upon walls and tablets of stone.

The Eskimos inhabit the Arctic regions. They live by hunting and fishing; the struggle with the elements has developed great ingenuity in providing shelter, food, and clothing. They are a barbarous, not a savage people.



## THE UNITED STATES.

In what part of North America is the United States? Bound it. Name the Atlantic coast land-forms; water-forms; the Gulf coast-forms; the Pacific coast-forms. What natural boundaries on the north?

Estimate the area of the United States from scale of miles and maps.

Name the States of the Union that touch the Atlantic Ocean; the Gulf of Mexico; the Great Lakes; the east side of the Mississippi River; the Ohio River; the west side of the Mississippi River; the Missouri River; the Pacific Ocean; Canada; two States and two Territories touching Mexico; four States and two Territories not previously named.

### SURFACE.

What surface divisions of North America in the United States? Describe the surface encountered in traveling across the middle of the country from ocean to ocean. Describe ten rivers.

### CLIMATE.

In what zone does the United States lie? What parts are rendered colder by elevation? What parts are open to Arctic air currents? What parts are warmed by equatorial air currents? What parts receive abundant moisture, and why? What parts little moisture, and why?

### THE WEATHER.

By the term weather we refer to the temporary condition of the atmosphere. It is to be distinguished from climate, which is the average of weather conditions extending over a long period.

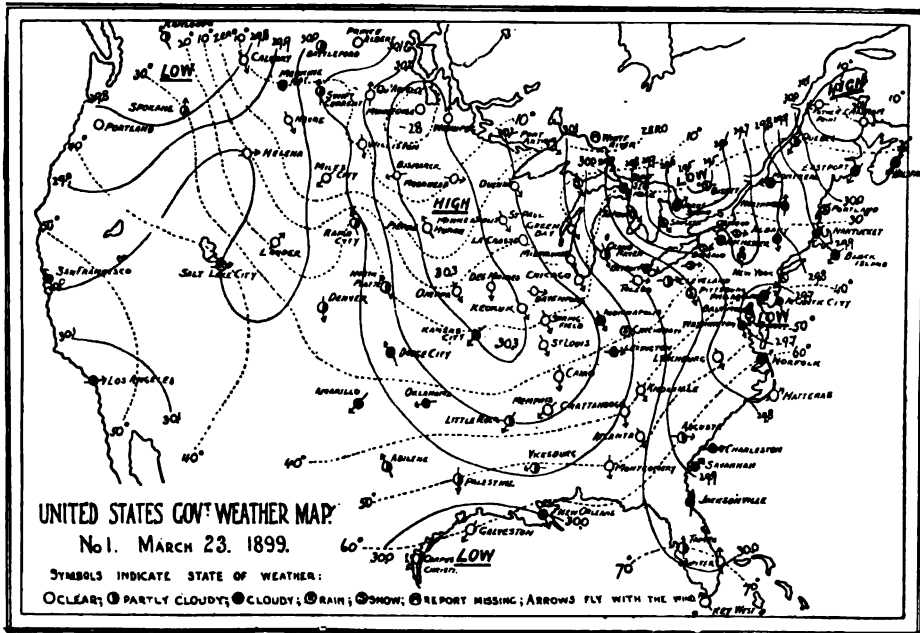
Great progress has been made in the last quarter-century in knowledge of weather changes. This progress has been greatest in our own country, because the observations could be extended under one management over so wide an area.

The science which treats of the weather and its causes is called METEOROLOGY.

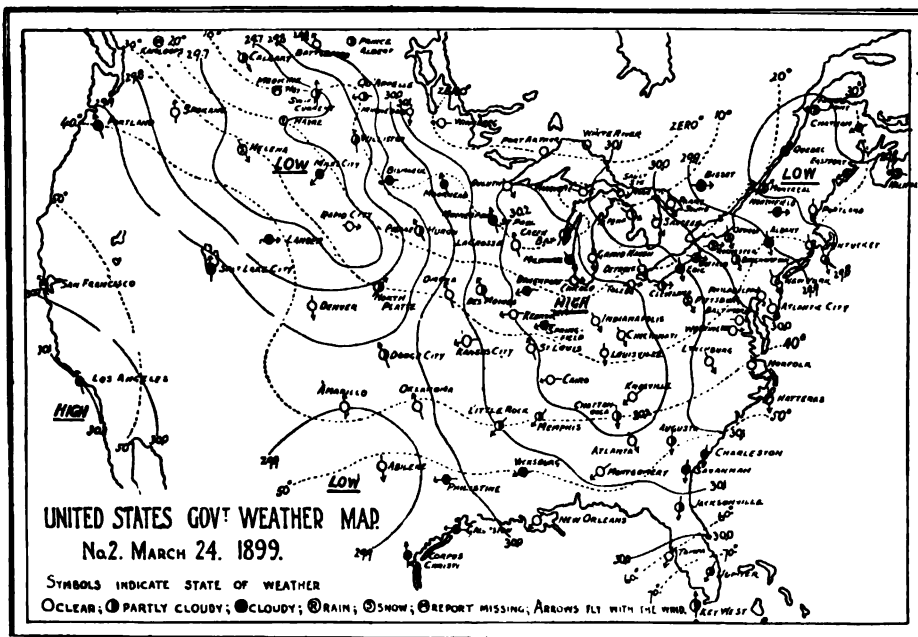
The WEATHER MAP is a chart showing the results of observations taken at the same time over a large area. By telegraphic communication, each station may receive and tabulate the conditions of the entire country within two or three hours.

ISOBARS are lines of equal barometric pressure. ISOTHERMS are lines of equal temperature.

Forecasts are made by noting the position of high and low barometric areas and of warm and cold isotherms. It has been observed



that alternating waves of heat and cold and of high and low barometer sweep across the country in a general eastward direction.



The area of low barometer is the wind or storm center. It is also called a cyclone because the air moves in a circle, though it is

[illegible]









West from Greenwich

85

75

Locate the Manufacturing Section. The leading manufactures of this section are cotton and woolen goods, shoes, notions, and small machinery. In the Coal and Iron Section, steel and iron goods and large machinery are made. In the Northern Agricultural Section, farm implements and flour are extensively manufactured. What part of the world's manufacturing is done by the United States?

*Commerce.*—What does the United States export? What articles must be extensively, or almost entirely, imported? What ones are produced here that we are obliged also to import in order to supply the home demand? What proportion of the world's trade is carried on by the United States?

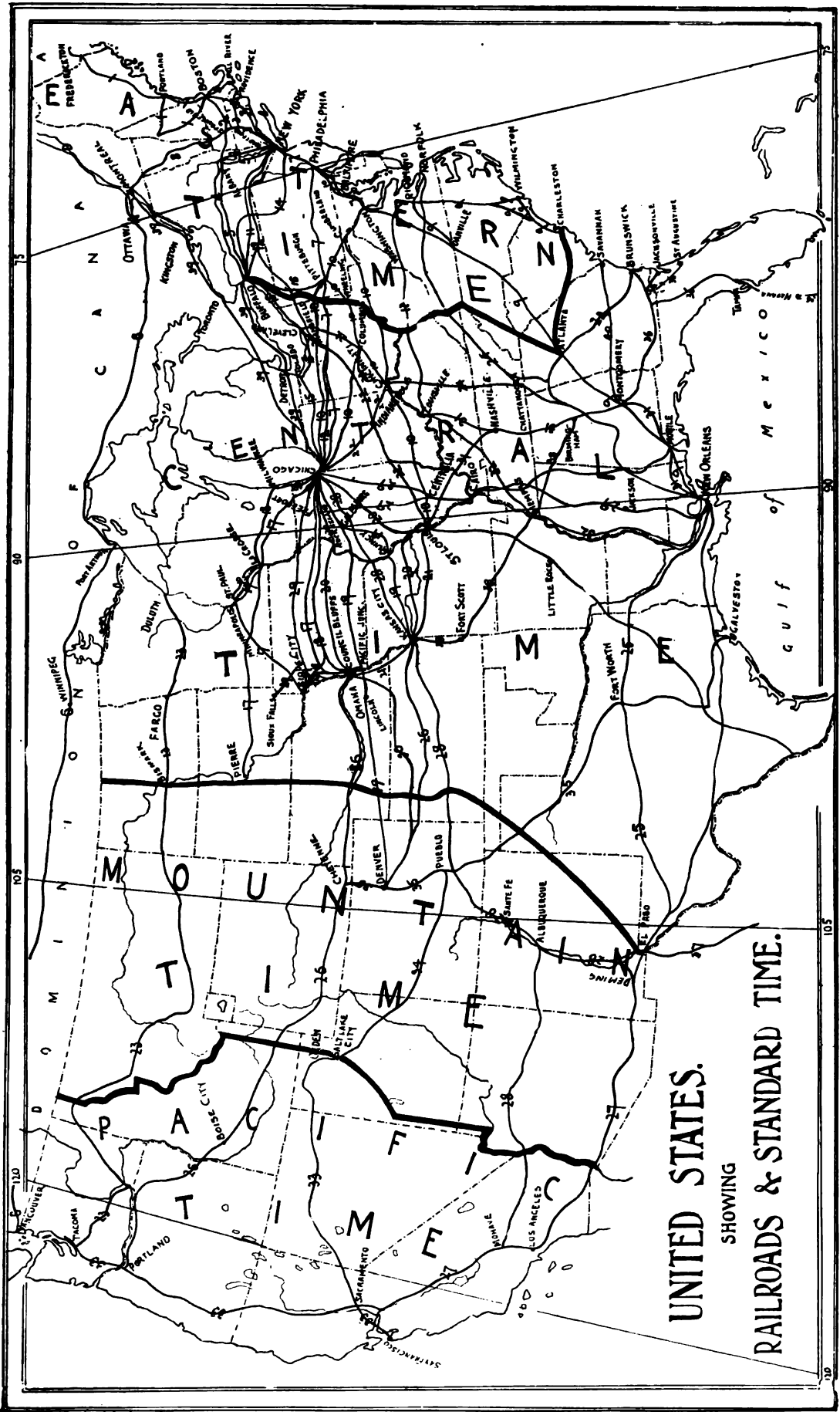
#### STANDARD TIME.

What is the longitude of Boston? Of San Francisco? What is the difference in time? Until within a few years, each town and village in the country kept its own local sun time. Each system of railroads adopted the time of some city on its route by which to govern the time of its trains. The difference between railroad time and local time was very confusing to the traveler, since it would vary from a few to many minutes, either slow or fast. In order to secure uniformity the railroads adopted the time of the 75th, 90th, 105th, and 120th meridians by which to schedule their trains. When it is midnight in London, what is the time at each of these meridians? The time of the 75th meridian is Eastern Time; it is the time used on the Atlantic seaboard as far west as Buffalo and Pittsburgh. That of the 90th meridian is Central Time, the time of the Mississippi Valley. That of the 105th meridian is Mountain Time, the time of the Rocky Mountain region. That of the 120th meridian is Pacific Time, the time of the Pacific Coast. Theoretically, the time of each of these standard meridians is to be operative for  $7\frac{1}{2}$  degrees or a half-hour on each side; but practically, large cities, like Pittsburgh and Buffalo, situated nearly midway between standard meridians, are selected as convenient places for change of time. What is the difference in railroad time east and west of one of these changing points? What change need a person make in his watch in traveling from San Francisco to Chicago?

The cities of the country have generally adopted the standard time nearest their own local time; thus, Pittsburgh and Buffalo both use Eastern Standard Time. Some cities, like Cleveland, situated midway between two standards, use time differing by just a half-hour from standard time. Which standard time is used in your school?

#### KEY TO RAILROAD MAP.

- |                                 |                                     |                                     |
|---------------------------------|-------------------------------------|-------------------------------------|
| 1. Boston & Maine.              | 15. Lake Shore & Mich. Southern.    | 29. Atchison, Topeka & Santa Fe.    |
| 2. Boston & Albany.             | 16. Alleghany Valley.               | 30. Illinois Central.               |
| 3. N. Y., New Haven & Hartford. | 17. Chicago & Northwestern.         | 31. Chicago, Rock Island & Pacific. |
| 4. N. Y., Gen. & Hudson R.      | 18. Chicago, Mil. & St. Paul.       | 32. Louisville & Nashville.         |
| 5. West Shore.                  | 19. Chicago, Burl. & Quincy.        | 33. Louisville, New Orleans & Tex.  |
| 6. Canadian Pacific.            | 20. Chicago & Alton.                | 34. Central Pacific.                |
| 7. Pennsylvania.                | 21. Missouri Pacific.               | 35. Denver & Rio Grande.            |
| 8. Vermont Central.             | 22. Cleveland, Cin., Chic. & St. L. | 36. Fort Worth & Denver City.       |
| 9. Atlantic Coast Line.         | 23. Northern Pacific.               | 37. Plant System.                   |
| 10. Baltimore & Ohio.           | 24. East Tenn., Virginia & Ga.      | 38. Mexican Central.                |
| 11. Delaware, Lack. & Western.  | 25. Texas Pacific.                  | 39. Kan. City, Ft. Scott & Memphis. |
| 12. Erie Line.                  | 26. Union Pacific.                  | 40. Grand Trunk.                    |
| 13. Lake & Ohio.                | 27. Southern Pacific.               |                                     |
| 14. Valley.                     |                                     |                                     |



UNITED STATES.  
SHOWING  
RAILROADS & STANDARD TIME.



## THE NEW ENGLAND STATES.

## THE MANUFACTURING SECTION.

## LOCATION.

In what part of the United States is this section? Name the six States which compose it. What State bounds it on the west? On what boundaries is the Dominion of Canada? The Atlantic Ocean? Give the boundaries of each State roughly, thus: Maine has Canada on the northwest, north, and east; the Atlantic Ocean on the southeast, New Hampshire on the southwest. What is the general shape of New Hampshire? Give its boundaries. Massachusetts; Connecticut; Rhode Island, the smallest State in the Union; Vermont.

## SURFACE.

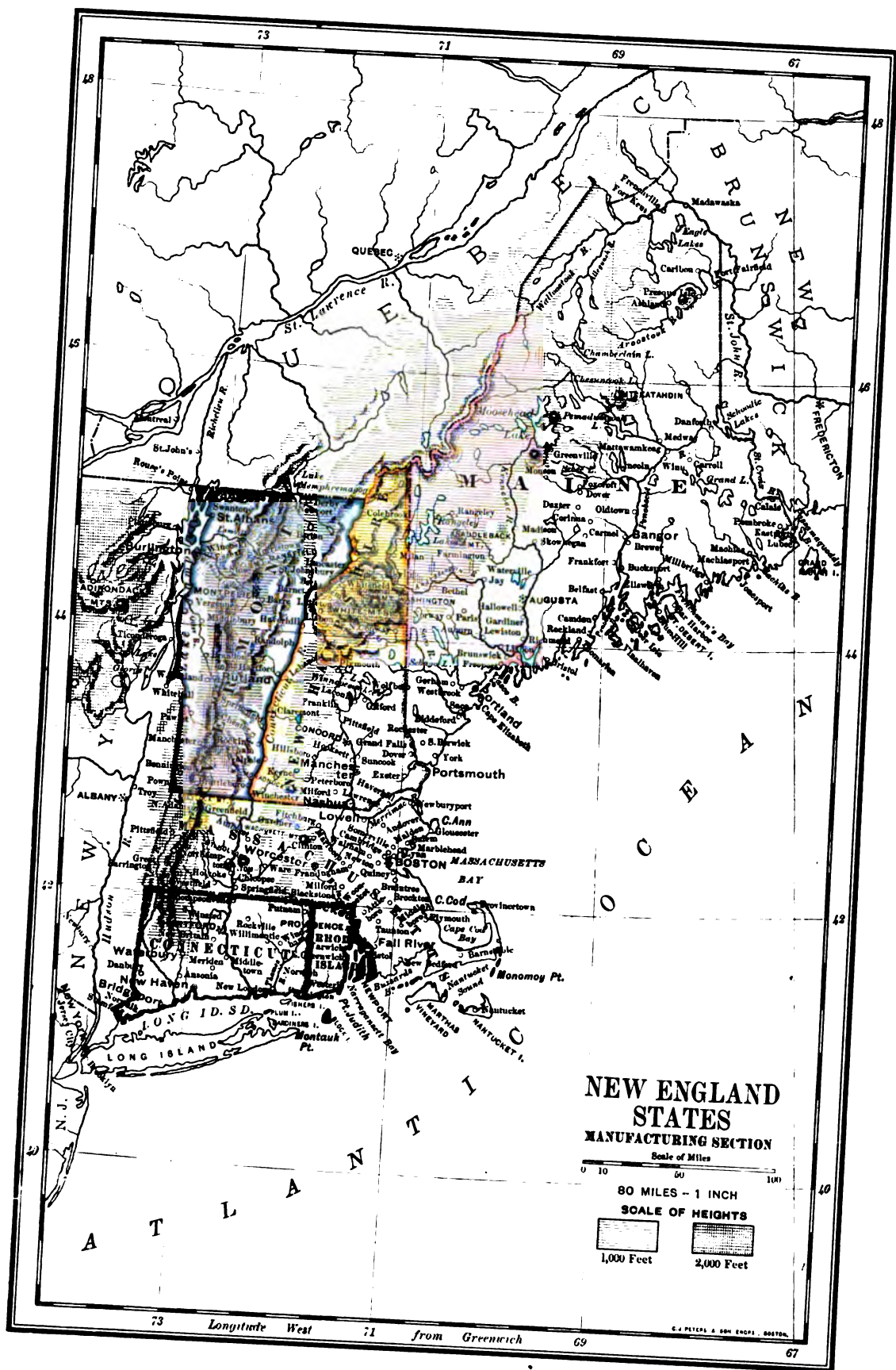
What part of this section has highlands? Note the position of these highlands between the Atlantic Ocean and the St. Lawrence River. To what Highland System do these highlands belong? What group of mountains in New Hampshire? What range of mountains in Vermont? What name has the same range in Massachusetts? What is the highest mountain of this range? Give location of Mt. Mansfield, Mt. Greylock, Mt. Katahdin, each the highest peak in the respective States.

From the highland region what is the general direction of slope? What great river flows through New England? Describe its course. What highlands does it separate? Between what States does it form the boundary? Name and describe three rivers of Maine. What two rivers between Maine and Canada? Describe the course of the Merrimac River, the Blackstone, the Thames, the Housatonic. What part of New England is drained by the St. Lawrence System? What lake first receives this drainage? What river is its outlet? What lake in the northwestern part of Maine? In the southwestern part? What lake south of the White Mountains in New Hampshire?

The surface of New England, exclusive of the State of Maine, is generally rough and rocky, even in the low parts. The level coast lands are very narrow, except in southeastern Massachusetts and up the Connecticut Valley. Boulders and rocky beds give evidence of the glacial action to which the entire surface was exposed. The rugged surface renders the courses of the streams very irregular. Their numerous rapids and waterfalls supply abundant water power.

Glacial abrasions, even upon the high mountain tops, give evidence that the ice sheet in New England was very thick. It extended to the sea, forming in its terminal moraines Long Island and the islands southeast of Massachusetts.

The surface of Maine is in marked contrast to the other parts of the section. There are no high mountains; the divide between the river basins is for the most part a great plain abounding in



take many of which have outlets in both directions. The Atlantic slope is long, and the descent is only about seven feet to the mile.

The Highlands of New England are among the oldest in America. Disintegration is taking place very rapidly, because of the generally moist climate. The granite hills and the White Mountains are crumbling away. The feldspar of the granite breaks first and forms clay. It loosens the grains of sand which constitute the quartz. The result is beds of clay covered with sand taking the place of the granite hills.

#### COAST LINE.

Compare the character of the coast of Maine with that of the remainder of the section. What State has no coast? About how long is the seacoast of New Hampshire?

What three bays on the coast of Maine? Locate three bays on the coast of Massachusetts; one other bay on the coast of New England? What body of water south of Connecticut?

Name an island off the coast of Maine? What two large islands off the coast of Massachusetts? What peninsula is a part of the same State?

The coast of New England was once much higher than now. The broad plateau was cut and worn by many streams. The land slowly subsided, and the lowland on the coast was submerged. The water set back into the river valleys, drowning them and forming broad, deep bays, called fiords on the coast of Maine, estuaries on the coast of Connecticut. These are excellent harbors.

The rugged rocky islands off the coast of Maine, New Hampshire, and northeastern Massachusetts are the hilltops of the land which has been thus submerged, or drowned. Long spurs of these hills extend out into the sea, marked by lighthouses and buoys to direct vessels in the old river channels.

#### CLIMATE.

Where does the parallel of 45° cross New England? How is this parallel related to the equator and to the North Pole? In this latitude what direction would we expect the prevailing wind to be in winter, and what effect would it have upon the temperature and moisture? What direction in the summer, and what effect? Is there anything to deflect the winds from their natural course? What effect has the excellent drainage upon the general healthfulness of the climate.

The winters of New England are long and severe. For the most part the cold is uniform, though there are occasional periods when it is very intense, and is rendered more rigorous near the coast by the great amount of humidity in the atmosphere. The snowfall is great, and in the interior the snow lies on the ground a large part of the winter.

The summers are cool and pleasant, with abundance of rainfall. Extreme heat occasionally prevails for a short period.



Lerry Picture Co.

DRYING CODFISH, PROVINCETOWN, MASS.

Along the coast and among the mountains are many delightful summer resorts.

#### SOIL AND FORESTRY.

In general the soil of New England is poor. The Connecticut River Valley is broad and fertile. This river flows in the trough between the highlands. Other river valleys, especially those in Vermont, are fairly productive.

Except upon the sandy coasts, the surface was heavily wooded. About half of the State of Maine and much of New Hampshire are still covered with forests of pine, hemlock, spruce, and fir.

The cutting of the forests has had a marked effect upon the rivers. What difference has it made in their ordinary flow? What difference in their flood time? Explain why?

#### OCCUPATIONS AND PRODUCTIONS.

Agriculture is the primitive occupation everywhere. In those sections where it is profitable, other industries are slow to take its place. The poverty of the soil and the severe climate early compelled the people of this section to seek other means of living. The rapid streams, affording such excellent and abundant water power, together with the natural facilities for commerce, have made this the great manufacturing section of the country. The southern and southeastern part is studded with thriving manufacturing cities.

Cotton and woolen goods, boots and shoes, firearms, clocks and watches, small machinery, and implements are manufactured in great quantity and variety.

Massachusetts excels all other States in the manufacture of cotton and woolen goods, while New Hampshire and Rhode Island are not far behind. The Merrimac River is said to turn more spindles than any other stream in the world. Connecticut is noted for the great variety of its manufactures.

Other occupations are, lumbering, which is the principal industry in Maine; dairying in Vermont, which is second only to New York in the production of butter and cheese; granite quarrying throughout the entire section; ice cutting in Maine and Massachusetts. Massachusetts is the first State in the Union in the production of granite; Maine stands second. New Hampshire is called the Granite State; it yield four-fifths of the mica produced in the entire country. Vermont yields two-thirds of the marble quarried in the United States and is the first State in the Union in the production of maple sugar.

Notwithstanding the natural sterility of soil, much of it has been rendered productive by artificial fertilizers, and small farming is fairly profitable because of the excellent market afforded by the large number of cities. Vermont is pre-eminently an agricultural State.

The staple grains and vegetables of the Northern States are produced in New England. Tobacco is extensively grown in the Connecticut River Valley. Apples and small fruits are extensively raised, the former being the principal fruit product of the section.

#### POPULATION.

The first settlers of New England were the Puritans, who came from England. They were bound for a haven farther south, but were driven from their course by a severe storm, and sought shelter in the harbor of Plymouth. They landed here in December, 1620. They found little to attract them to this region as a home; but, forced to provide for their immediate wants, and finding the Indians friendly, they built a permanent settlement. Immigration continued, and the wrestle with unfavorable conditions developed a sturdy, industrious, and intelligent people. Many of the descendants of this early population have emigrated to the States farther west, while the population of this section has been replenished and greatly augmented by a steady stream of immigration from the countries of the Old World.

What influences have operated to attract immigration during late years?

#### CITIES.

Name and locate the capital of each of the New England States.

*Boston* is the largest city in New England and the fourth in size in the United States; it is noted for its educational institutions, its extensive commerce, and its great variety of manufactures.

*Fall River* is the first city in the Union in the manufacture of cotton goods. It has also a large nail manufactory.

*Lowell* has extensive cotton and woolen mills, and is noted also for its machine shops and patent-medicine establishments.

*Worcester* is noted for its great variety of manufactures. It has the largest wire mill in the world, and makes one-third of the envelopes used in the country.

*Lynn* is noted for boots and shoes and morocco leather.

*Haverhill* manufactures more boots and shoes than any other city.

*New Bedford* is an old whaling port and is largely engaged in the manufacture of cotton goods.



BOSTON PUBLIC LIBRARY.

*Springfield* is central to a good agricultural district; it has fine buildings, varied manufactures, and includes the United States Armory.

*Lawrence* has large cotton manufactures.

*Cambridge* is closely connected with Boston; it is the seat of Harvard University.

*Plymouth* is the oldest town in New England. When and by whom was it founded?

Locate each of the above cities. Name the cotton-manufacturing cities of Massachusetts.

*Providence* is the seat of Brown University, manufactures cotton goods and jewelry, and has an extensive coasting trade.

*Pawtucket* is the birthplace of the cotton-manufacturing industry in the United States, which began here in 1790. It also produces large quantities of knit goods.

*Newport* is a famous summer resort.

*Hartford* is the headquarters for many large insurance companies. It is noted for its great wealth. It has large machine shops and locomotive works.

*New Haven* is the seat of Yale University.

*Bridgeport* has great variety of manufactures, chief among which are corsets, sewing machines, and brass goods.

*Waterbury* has great manufactories of brass goods and other goods in great variety.

*Meriden* has large silver-plating establishments and extensive breweries.

*Portland* has a fine harbor, and is the largest city and chief commercial center of Maine. *Bangor* has a large lumber trade. *Bath* is noted for shipbuilding.

*Burlington*, a beautiful city on Lake Champlain, is noted for its lumber trade. *Rutland* has fine marble quarries.

*Manchester* manufactures cotton goods. *Portsmouth*, the only seaport of New Hampshire, has a United States Navy Yard.

Locate each of the above-named cities.

#### EDUCATION.

The States of this section are far advanced in all facilities for the education of the young. Public schools are open in the country



HIGH SCHOOL, SPRINGFIELD, MASS.

districts for nine months in the year; in the cities, for ten months. Not only is the instruction free, but in most places the pupils are provided with all text-books and supplies at public expense. Every

city, and almost every small town, maintains a public high school in which students can fully prepare for entrance to college.

Many colleges and universities of high rank are located in this section. Besides those already mentioned, the following may be named: Bowdoin at Brunswick, Me.; Dartmouth at Hanover, N. H.; University of Vermont at Burlington; Trinity at Hartford, and Wesleyan at Middletown, Conn. In Massachusetts, Boston Institute of Technology, Amherst, Williams at Williamstown, Tufts at Medford, Clark University at Worcester; and three colleges exclusively for women, Smith at Northampton, Wellesley, and Mt. Holyoke.

Many Normal Schools have been established under control of the various States for the free training of teachers.

#### COMMERCE.

Domestic commerce is carried on by means of coasting vessels and railroads. From Boston, lines of steamers run to many European ports. Steamship lines ply between New York and each of the following ports: Boston, Portland, Fall River, Providence, Hartford, New Haven, and Bridgeport.

What railroad line from New York to Boston, *via* Providence? What line from Boston westward through Massachusetts? What line connects Boston and Portland? What line from New York to Springfield, *via* Hartford? (See railroad map, p. 93.)

### THE MIDDLE ATLANTIC STATES.

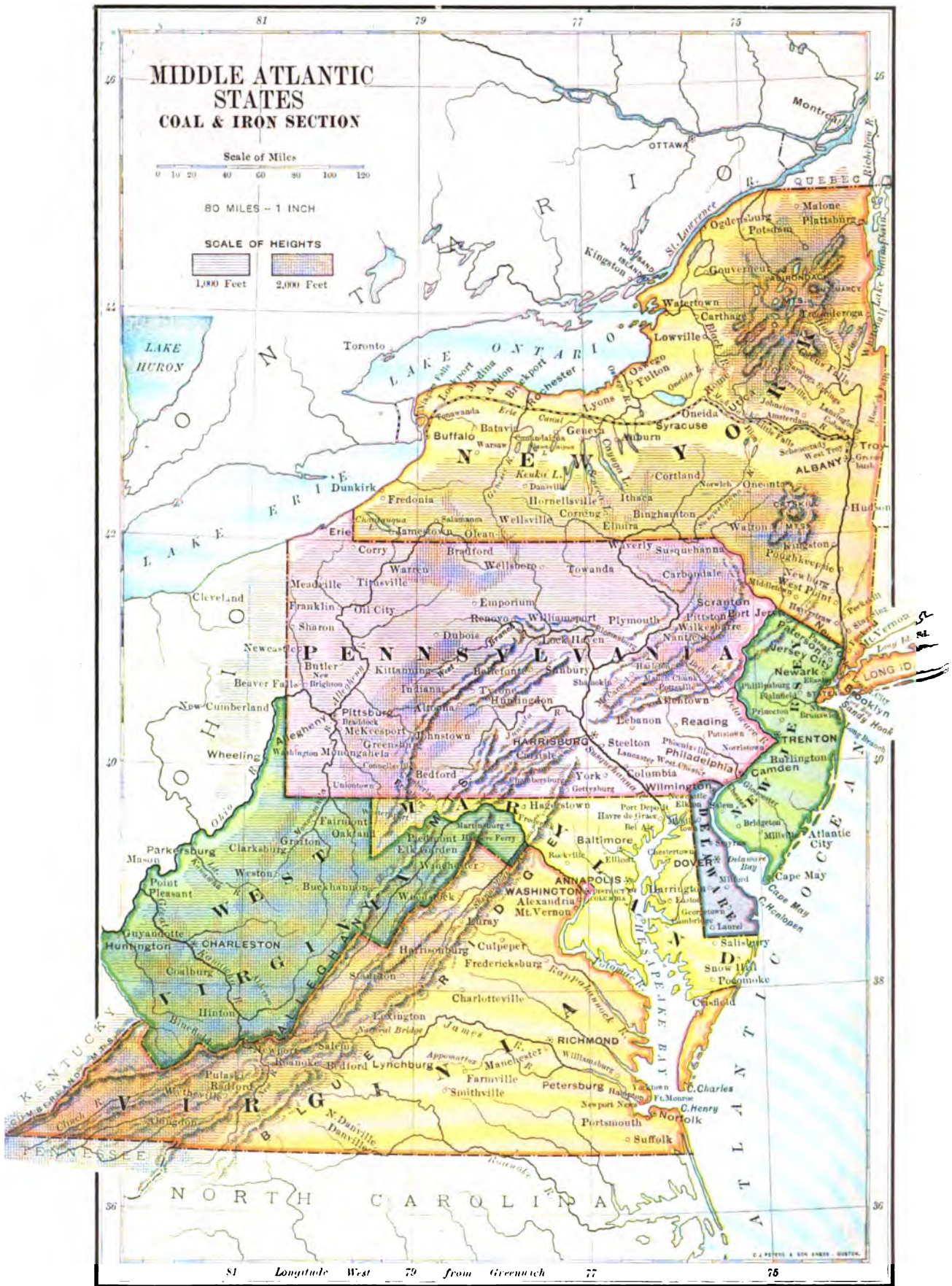
#### THE COAL AND IRON SECTION.

##### LOCATION.

What seven States compose this section? What natural boundaries has it? What States on the west? What States east of New York? What country northwest of New York? What States south of Virginia? Name and locate four arms of the sea indenting the coast of this section. What two capes at the mouth of Delaware Bay? What two capes at the mouth of Chesapeake Bay? What cape on the coast of New Jersey at the entrance to New York Bay? What two islands belonging to New York? Name the boundaries of New York; of Pennsylvania; of Virginia. . What State is divided and what State partly divided by the Chesapeake Bay?

What is the general shape of New York? Of Pennsylvania? Of New Jersey? Of Delaware? Of Virginia? Estimate the area of each by use of the scale of miles, and compare it with the area of the State in which you live.





The District of Columbia was originally ten miles square and occupied territory on both sides of the Potomac River. It was selected by Washington in 1791 as the site for the capital of the United States, and the city, called the Federal City, was laid out by him. The portion of the district taken from the State of Virginia was afterwards ceded back. The present district contains 64 square miles, and includes the city of Washington and the old town of Georgetown. It is governed by the Congress of the United States.

#### SURFACE.

What mountain system extends through this section? What mountains in the northwestern part of New York? What mountains in the southeastern part? What are the two principal ranges in Pennsylvania and the Virginias? What range on the western boundary of Virginia?



THE NEW CITY HALL, PHILADELPHIA.

What four rivers have broken through this highland region, cutting transverse valleys? Describe the Hudson River and its principal affluent; the Susquehanna and its principal affluent; the Potomac and its principal affluent;

## THE NEW ENGLAND STATES.

## THE MANUFACTURING SECTION.

## LOCATION.

In what part of the United States is this section? Name the six States which compose it. What State bounds it on the west? On what boundaries is the Dominion of Canada? The Atlantic Ocean? Give the boundaries of each State roughly, thus: Maine has Canada on the northwest, north, and east; the Atlantic Ocean on the southeast, New Hampshire on the southwest. What is the general shape of New Hampshire? Give its boundaries. Massachusetts; Connecticut; Rhode Island, the smallest State in the Union; Vermont.

## SURFACE.

What part of this section has highlands? Note the position of these highlands between the Atlantic Ocean and the St. Lawrence River. To what Highland System do these highlands belong? What group of mountains in New Hampshire? What range of mountains in Vermont? What name has the same range in Massachusetts? What is the highest mountain of this range? Give location of Mt. Mansfield, Mt. Greylock, Mt. Katahdin, each the highest peak in the respective States.

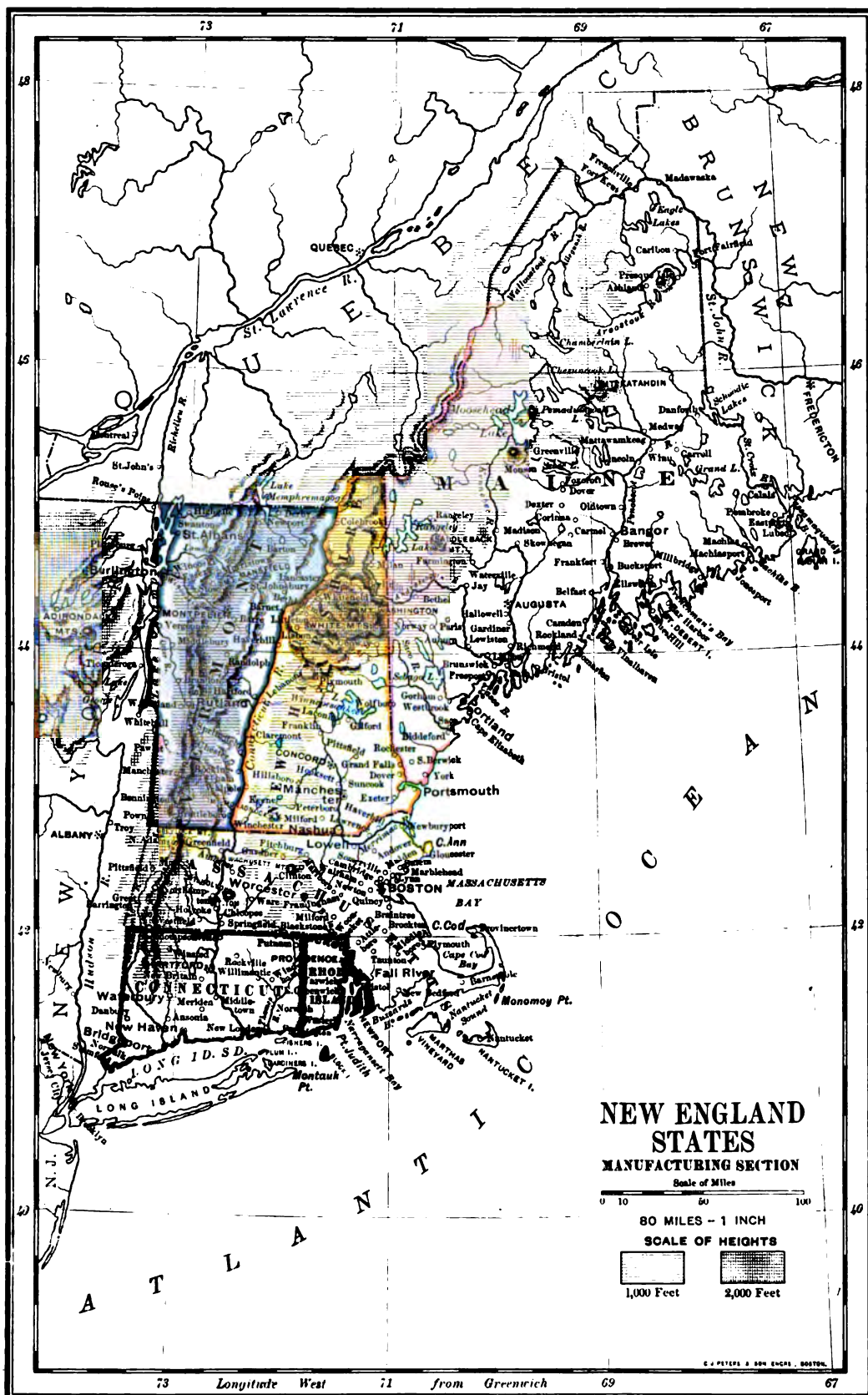
From the highland region what is the general direction of slope? What great river flows through New England? Describe its course. What highlands does it separate? Between what States does it form the boundary? Name and describe three rivers of Maine. What two rivers between Maine and Canada? Describe the course of the Merrimac River, the Blackstone, the Thames, the Housatonic. What part of New England is drained by the St. Lawrence System? What lake first receives this drainage? What river is its outlet? What lake in the northwestern part of Maine? In the southwestern part? What lake south of the White Mountains in New Hampshire?

The surface of New England, exclusive of the State of Maine, is generally rough and rocky, even in the low parts. The level coast lands are very narrow, except in southeastern Massachusetts and up the Connecticut Valley. Boulders and rocky beds give evidence of the glacial action to which the entire surface was exposed. The rugged surface renders the courses of the streams very irregular. Their numerous rapids and waterfalls supply abundant water power.

Glacial abrasions, even upon the high mountain tops, give evidence that the ice sheet in New England was very thick. It extended to the sea, forming in its terminal moraines Long Island and the islands southeast of Massachusetts.

The surface of Maine is in marked contrast to the other parts of the section. There are no high mountains; the divide between the river basins is for the most part a great plain abounding in







NIAGARA FALLS.

College in eastern Pennsylvania, for women. The United States Military Academy at West Point, N. Y., and the United States



NORMAL SCHOOL FOR GIRLS. PHILADELPHIA.

Naval Academy at Annapolis, Md., are the great training schools of the nation in these two departments. Scattered throughout this



WESTINGHOUSE ELECTRIC MANUFACTURING COMPANY, WHERE SIX THOUSAND MEN ARE DAILY EMPLOYED.

section are many smaller colleges, which place the means of education at the doors of the people.

## OCCUPATIONS AND PRODUCTIONS.

What parts of this section are suited to agriculture? For what grains are the valleys of western New York and Pennsylvania suited? What effect does the presence of the large cities New York, Philadelphia, Baltimore, and Washington have upon the character of agriculture and products of New Jersey, Delaware, and eastern Maryland? What parts of this section are not well suited to agriculture? What occupations allied to farming can be carried on? In what parts would you expect game to be abundant? Where would fishing be an important industry?



INDEPENDENCE HALL, PHILADELPHIA.

The mountains of Pennsylvania and the Virginias are rich in coal and iron. Mining and reducing ores, therefore, extensively engage the people. The northeastern part of Pennsylvania is the great anthracite coal region of the world. The northwestern part is the great petroleum center of the United States. Natural gas is found in large quantities in the vicinity of Pittsburgh. It was used extensively as fuel instead of coal in manufacturing; but the diminished supply of late years has limited its use to private dwellings. Pennsylvania manufactures more than half of the iron and steel made in the country.

New York, the Empire State, is the first State in the Union in population, wealth, manufactures, and commerce. It leads all other States in the production of butter and cheese. Salt is an important product, found chiefly in the Warsaw district east of Buffalo, and in the Onondaga district about Syracuse.

Virginia is called the Old Dominion; also the Mother of Presidents, seven Presidents of the United States having been born in this State. Virginia leads all other States in the production of tobacco.

Delaware, next to Rhode Island, is the smallest State in the Union. It is 9 to 36 miles wide and 96 miles long. Ten-thirteenths of the



ON THE BEACH, ATLANTIC CITY.

State is in farms. It is especially noted for the production of peaches.

Maryland vies with Delaware and New Jersey in the production of small fruits and vegetables. The first has the finest oyster-beds in the world.

West Virginia is rich in coal and iron and in forests. It is third in the production of petroleum.

#### CITIES AND TOWNS.

*New York* (Greater New York), with its recent additions, Brooklyn, Staten Island, and Long Island City, contains about three and a half millions of people, being the second city in the world in population, wealth, and commerce. *Jersey City*, *Newark*, and *Hoboken*, in New Jersey, are parts of the same great commercial center.

This is also the greatest manufacturing center in the United States, and the manufactures are of very great variety. The chief manufactures are clothing, boots and shoes, books, tobacco, and machinery. Brooklyn has large sugar refineries and machine-shops. The United States Navy Yard is located here. Jersey City includes sugar refineries and tobacco factories that are among the largest in the world.

New York has one of the finest harbors in the world, the harbor and bays



containing over a hundred square miles of anchorage. The harbor front where ocean steamers may land is more than fifty miles long. More than half the foreign trade of the country passes through this port.



BROADWAY, NEW YORK CITY.



ELEVATED RAILROAD, NEW YORK CITY.

New York is the great news-center of the country, and contains some of the largest book-publishing establishments.

The New York and Brooklyn Bridge, across the East River, completed in



BROOKLYN BRIDGE.

1883 at a cost of \$15,000,000, is about one and one-fourth miles long. It is the largest bridge in the world, and is a marvel of engineering skill.

*Philadelphia* (Brotherly Love) is the greatest ship-building port in the United States. It is surpassed only by New York and Chicago in the extent of its manufacturing industries, which are practically of the same varied character as those of New York. Philadelphia is a historic city. It contains the house where Thomas Jefferson wrote the Declaration of Independence ; Independence

Hall, where it was adopted; and the house where Betsy Ross made the first American Flag.

*Washington* (The City of Magnificent Distances) was created especially for the seat of government, and no pains have been spared to make it the most beautiful and attractive city in the country. Whatever manufacturing or commercial importance it has attained is secondary and incidental. There are more than 300 parks, varying in area from a few hundred square feet to over 80 acres. These parks are adorned with many beautiful monuments, memorials of statesmen, soldiers, and scholars who have distinguished themselves in the service of the country.



THE CONGRESSIONAL LIBRARY, WASHINGTON.

Washington Monument (555 ft.) is the highest stone structure in the world.

The most important buildings are the Capitol, Executive Mansion (White House), Treasury Building, State, War and Navy Building, Patent Office, Pension Office, National Museum, Smithsonian Institution, and the new Congressional Library Building, which is the most richly decorated building in the United States.

*Pittsburgh* (The Smoky City) is the center of the iron and steel industry and of the greatest natural gas and bituminous coal region. It is also the leading plate glass center of the world.

*Baltimore* (The Monumental City) is the most compactly built city in the country, noted for its oyster market and shipyards.

*Buffalo* is noted for its broad, shaded streets with fine pavements, and for its great Lake trade in grain and cattle.

*Rochester* is noted for the manufacture of carriages, microscopes, clothing, boots and shoes.

*Syracuse* is noted for the manufacture of soda ash. The salt industries, which were formerly important, have greatly deteriorated.

*Utica* manufactures cotton and woolen goods, boots and shoes.

*Scranton* and *Wilkesbarre* are the centers of the anthracite coal trade.



STATUE OF LIBERTY IN NEW YORK HARBOR.

*Albany* is noted for its cattle trade from the West and for the manufacture of stoves.

*Elmira* and *Binghamton* are beautiful cities in fine agricultural regions.

*Erie* has extensive manufactories and a fine Lake trade.

*Williamsport* has a large lumber trade.

*Reading* and *Wheeling* are noted for their iron- and steel-works.

*Wilmington* manufactures railroad cars and leather.

*Richmond* has great tobacco factories and warehouses.

*Norfolk* has a government navy yard.

Name and locate the capital of each State. Locate also Lynchburg, Petersburg, Cumberland, Altoona, Troy, Plattsburg. What city near Pittsburgh?

#### COMMERCE.

Added to the great natural facilities for commerce furnished by the ocean and the Great Lakes, the Hudson River is navigable to Troy, the Delaware to Philadelphia, the Mississippi and Ohio to Pittsburgh, the Susquehanna to Harrisburg, the Potomac to Baltimore, the James to Richmond.

What canal from Buffalo to Albany? Other branches of the same run from Lake Champlain to Albany and from Oswego, on Lake Ontario, to Syracuse. A canal also extends across the northern part of New Jersey from the Delaware to New York.



CAPITOL, WASHINGTON.

What two railroads from New York to Buffalo via Hudson River? What line from Pittsburgh to Philadelphia and New York? What line from Philadelphia, Baltimore, and Washington, westward to Cumberland and Wheeling? Locate the Delaware, Lackawanna & Western and the Chesapeake & Ohio railroads.



## THE NORTH CENTRAL STATES.

## THE NORTHERN AGRICULTURAL SECTION.

[Study the map questions for location and surface on pp. 118 and 119.]

## SURFACE.

Illinois is the most level State in the Union, the highest point in the State being only 520 feet higher than the lowest point. Indiana, Wisconsin, Minnesota, Iowa, Kansas, and Nebraska are gently undulating. Ohio and Kentucky are quite rugged in some parts. Missouri has great variety of surface. The southern part is mountainous. What river flows across the State? In Wisconsin the Fox River has its source, within a mile and a half of the Wisconsin River. The space between is occupied by a swamp. The surface of Minnesota is a tableland which abounds in beautiful lakes. More than a thousand lakes upon its surface attest the work of the great glacier. The generally uniform surface is broken by the great trough of the Red and Minnesota Rivers.

## CLIMATE.

In what latitude is the northern boundary of this section? The southern boundary? What can you say of the exposure of this section to Arctic air cur-



WHEAT THRESHING.

rents? To currents from the Gulf? What is the prevailing direction of these currents?

Which States would you expect to be most abundantly supplied with moisture from these winds? Which States most subject to drouth. The prevailing wind directions in the Dakotas, Nebraska, and western Iowa are northwest and southeast, instead of northeast and southwest. Can you give a reason? Which is warmer, Delaware and Maryland, or Kansas, and why? What great influence upon the climate of Michigan which cannot affect Iowa? What parts of this section are likely to be unhealthy because of sluggish drainage? Which parts have high, dry atmosphere, pure water, excellent drainage, and consequent healthfulness?

## SOIL AND FORESTRY.

The soil of this section is very fertile, but of varied character; that of the uplands being of glacial formation, while that of the river valleys is alluvial. Some of the States have but a small fraction of the surface that is not arable.



REAPING THE WHEAT

What States belong to the forest districts? What kinds of trees are most abundant?

The States bordering on the Mississippi River, and the tier of States farthest west, abound in extensive prairies. In these States there is not much timber, except along the river bottoms.

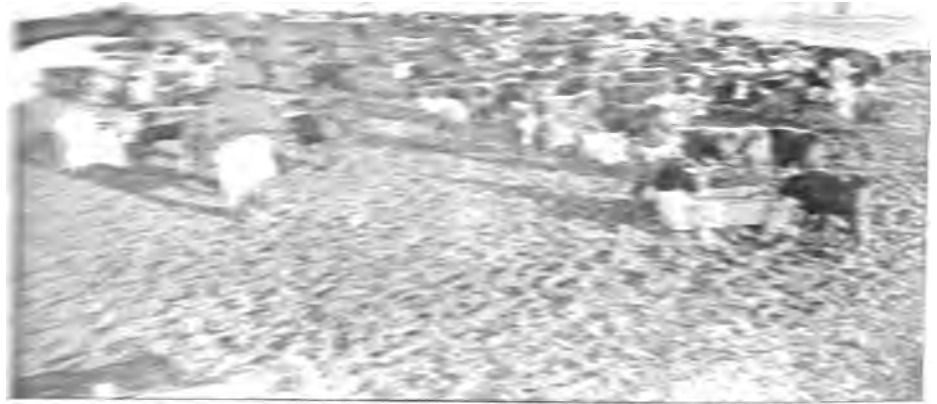
## OCCUPATIONS AND PRODUCTIONS.

The gently undulating surface which characterizes this section, the rich soil, and salubrious climate combine to make it the finest agricultural region of the world. What are the staple crops? Ohio is the first State in the Union in the production of wheat. Ohio, Indiana, Minnesota, Kansas, North Dakota, Illinois, Missouri, and Michigan produce two-thirds of the wheat raised in the United States. Iowa, Illinois, Kansas, Nebraska, and Indiana, about two-thirds of all the corn grown in the United States. Iowa, Illinois, Wisconsin, Minnesota, Indiana, Pennsylvania, and New York over half the oats.

THE UNITED STATES

The United States is a country of many different kinds of people and many different kinds of things. It is a country of many different kinds of people and many different kinds of things.

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copper, salt, and gypsum. The United States produces one-half of the copper of the world. Michigan yields one-third of that found in the United States. Missouri has large iron-ore deposits in the south-



HIGH SCHOOL, SIOUX CITY, IA.

eastern part. Missouri also has rich zinc and lead mines. Ohio is the first State in the supply of limestone for building purposes. Indiana is second only to Pennsylvania in the production of petroleum. Natural gas abounds in Ohio, Indiana, and to some extent in all the States of this section.

#### PEOPLE.

These States are the meeting-ground for two special lines of home emigration. The northern parts are peopled mostly from New York and the Northeast; the southern parts, from Virginia. In some places the foreign representation is very large. About one-third of the people of Minnesota and Wisconsin; one-fourth of those in Michigan, one-fifth of those in Illinois, were born in foreign lands.

The people are intelligent and progressive, take great interest in public questions, and provide liberally for the education of their children and youth. The provision of the Ordinance of 1847 that Section 16 of every Township be set aside for school purposes, has enabled many localities to provide school facilities without recourse to local taxation. Noted educational institutions are the University of Michigan at Ann Arbor and the Chicago University at Chicago. The section is also dotted with small colleges, like the Middle Atlantic section.

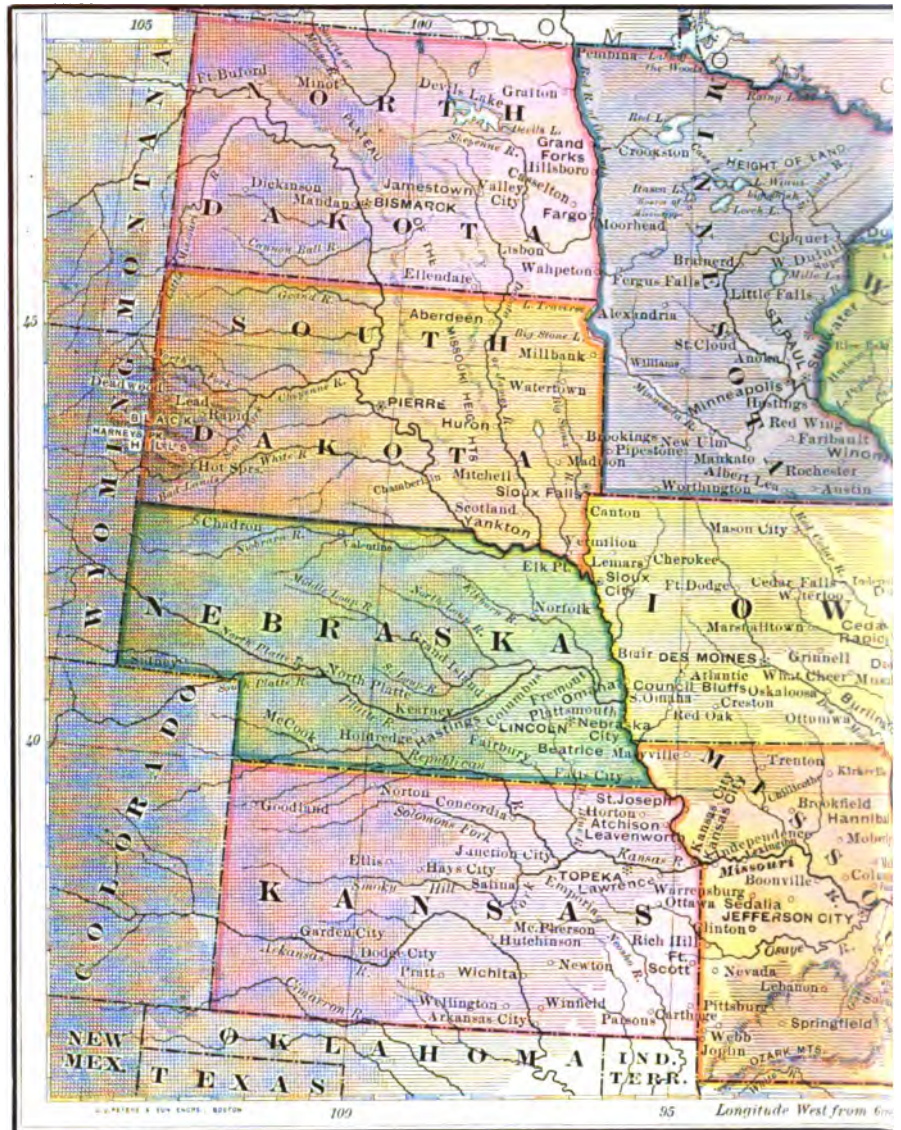
#### CITIES.

Name and locate the capital of each State.

Locate also the following :

*Chicago*, the second city in size on the Western Continent and the fourth in the world. It is second only to New York in the extent of its trade and manu-





#### LOCATION.

Name the States of this section. What country north? What State east and what State southeast of Ohio? What States south of this section? What States west? What States border on the Mississippi River? What upon the Ohio River? What upon the Missouri River? Name the boundaries of each State in this section. What Great Lakes on the north of this section? What one within the section? What small lake between Lake Huron and Lake Erie? What bay



is an arm of Lake Huron? What bay is an arm of Lake Michigan? What separates Northern Michigan from Southern Michigan? What natural land-form is each part of Michigan? What river connects Lake Superior and Lake Huron? What three parts of this section are mountainous? To what drainage system does Michigan belong? What part and how much of other States belong to this system? What river basin drains the remainder of this section? Trace the water-parting between the two basins on the map.

What is the general direction of slope in Ohio, Indiana, Illinois, and Wisconsin? What direction in Kentucky? In all the other States?



factures; it is the greatest grain and live-stock market in the world; it has the most extensive meat-packing establishments in the country.

*Cincinnati* is noted for great variety of manufactures and for pork-packing.

*St. Louis* is the largest city on the Mississippi River. It has a great variety of manufactures and extensive trade.

*Cleveland* is noted for immense iron and steel works and the building of Lake steamers. It is the center of the malleable iron trade in the United States.

*Toledo* (The Lady of the Lakes) has extensive malleable-iron works, wagon factories, and flour mills.

*Dayton* manufactures railroad cars and agricultural implements.

*Detroit* (The Queen City of the Lakes) is noted for its beautiful and healthful



UNION STOCK YARD, CHICAGO.

location. It has large industries in iron-works, heavy machinery, ship building, and furniture establishments.

*Minneapolis* is noted for its flouring mills. } (Twin Cities.)

*St. Paul* is the center of a large wholesale trade. }

*Milwaukee* is noted for its breweries, and its grain and lumber trade.

*Indianapolis* is a great railroad center.

*Louisville* manufactures gas-pipe, plows, wagons, leather, cement, cloth.

The leading live-stock markets and pork-packing cities are Chicago, Cincinnati, Omaha, Kansas City, St. Louis.

Iron and steel centers are Cleveland, Detroit, Toledo, Youngstown.

Manufacturing centers for farm machinery, implements, and wagons: Fort Wayne, South Bend, Racine, Terra Haute, Madison, Evanston.

Lumber markets: Saginaw, Bay City, and La Crosse.

What city in Minnesota on Lake Superior? Name three cities in Iowa on the Mississippi River; a city in the western part of Illinois on the Mississippi River; a city in the northwestern part of Iowa; two cities in the southeastern part of South Dakota; two cities in the northeastern part of Kansas; a city in the southwestern part of Missouri, one in the northwestern part, one at the southern point of Illinois.

Name ten important cities on the Missouri River, giving the name of the State to which each belongs; six cities on the Ohio River; six on the Great Lakes; six on the Mississippi River.

## COMMERCE.

This section lies in the path of the commerce between the East and the West. Great lines of railroad traverse these States, centering about the great cities of Chicago, St. Louis, and the Missouri River points. The Ohio River is navigable to Pittsburgh, the Mississippi to St. Paul. What other natural means of commerce have these States? What two canals connect the Ohio River with Lake Erie? What canal in Illinois?

What railroad connects Pittsburgh with Chicago? Buffalo with Chicago? Pittsburgh with St. Louis? Chicago with the Twin Cities; with Sioux City and Sioux Falls; with Omaha and Sioux City; with Kansas City? St. Louis with Kansas City? The Twin Cities with Bismarck? Cincinnati with St. Louis? Cleveland with St. Louis?

## THE SOUTHERN AGRICULTURAL SECTION.

## LOCATION.

Name the ten States included in this section. What two Territories? What State north of North Carolina? What State north of Tennessee? North of Arkansas? North of the Territories? What Territory west of Texas? What country southwest?

What are the natural boundaries of this section? What States border on the Atlantic Ocean? What States upon the Gulf of Mexico?

Give the surroundings of each State.

## SURFACE.

Into what States does the Appalachian Highland System extend? From this system in what direction do the rivers flow? Describe the following: Roanoke, Savannah, Altamaha and its two affluents, Appalachicola and its two affluents, the two rivers that enter Mobile Bay, Cumberland and Tennessee. What great river divides this section?

What highlands in the northern part of Arkansas? Describe the Arkansas River, the Red River. What plateau in Texas? Describe three rivers of Texas flowing into the Gulf? What river of Texas flows into the Rio Grande? What large lake in Florida? What lake in the northwestern part of Louisiana?

For a distance of 50 to 100 miles from the ocean and the gulf the surface of this section is a low plain, sandy and marshy on the coast, alluvial in the river valleys. North Carolina has 4000 square miles of marsh.

As we proceed toward the highlands the surface becomes gently rolling, then more and more hilly in the Piedmont Country, succeeded by low mountains. The highest elevations are the Black Mountains, where there are 43 peaks over 6000 feet high. The highest peak east of the Rocky Mountains is Mt. Mitchell, 6717 feet high. Reduce this number to miles.

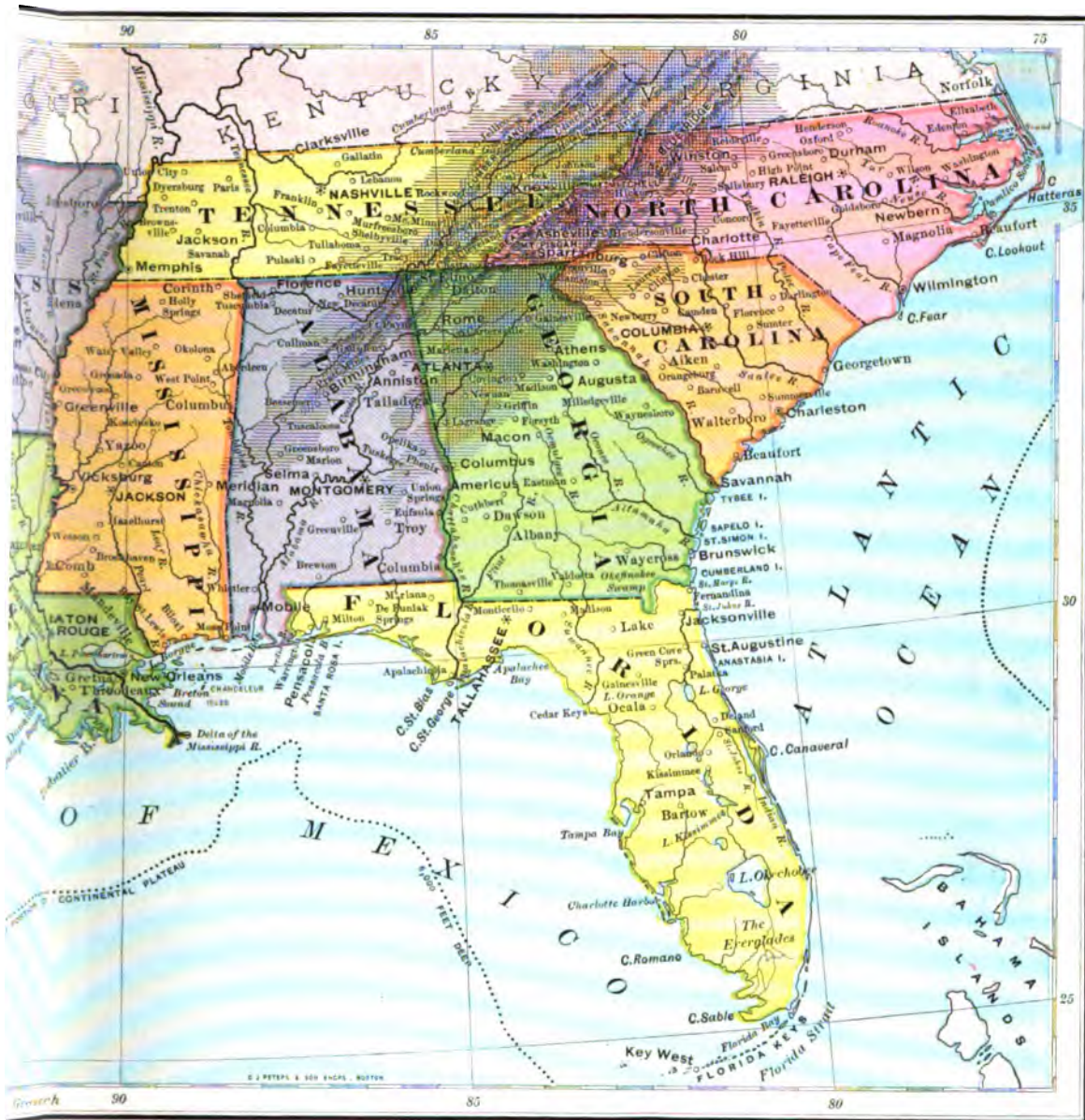


The highest point in the peninsular part of Florida is only 300 feet above the sea-level. Much of the surface is marshy, especially the southern part and the region around Lake Okechobee.

The surface of Texas, except the mountainous Trans-Pecos country, consists of a series of belts or benches nearly parallel with the coast. It is nearly all prairie. The coast prairie is a lowland 50 to 100 miles wide. Next comes the Lignitic Belt, a gently undulating prairie from 80 to 100 miles wide. From this the surface rises abruptly to the Grand Prairie, then to the Llano Estacado, both great plateaus.

Describe the surface of Tennessee by carefully noting the alternation of highlands and river valleys.





#### COAST-LINE.

The coast of this section is remarkable for the great stretches of narrow sand-bar islands, especially along the coasts of North Carolina, eastern Florida, and Texas. These have been formed by the tidal waves meeting the river currents laden with silt. These tidal waves retard the currents, causing the deposit of the silt.

What two sounds and three capes on the coast of North Carolina? What three bays on the Gulf coast of Florida? What cape at the southern point? What island off the southern coast? What bay on the coast of Alabama? Louisiana? Two bays on the coast of Texas? About how long is the sea coast of Alabama? Mississippi? Georgia? What gulf under the name of a lake in

southeastern Louisiana? Notice the formation between Vermilion Bay and this gulf. Can you account for it? Where do you think the coast-line once was?

What large island south of Florida? What strait separates it from Florida? How wide is this strait? What group of islands southeast of Florida? These islands belong to Great Britain. What group of islands in the Atlantic about 600 miles east of the coast of this section? These islands also belong to Great Britain.

#### CLIMATE.

What is the latitude of the northern boundary of this section? Of southern Louisiana? What would you expect the climate of the lowlands to be, as regards heat, moisture, and healthfulness, and why? What influence do the mountains have upon rainfall? Why would we expect little rain in western Texas?

In the uplands of these States are many delightful winter health resorts.

Snow seldom falls south of the 35th parallel.

#### SOIL AND FORESTRY.

With the exception of Texas and the Territories, this section abounds in forests. The lowlands on the Atlantic coast are noted for the production of pine lumber and other products of yellow pine. The uplands of the Gulf States also have extensive pine forests. The mountain lands produce oak, chestnut, hemlock, fir, and spruce. In the southeastern part, under the influence of the Gulf Stream, we find the tropical trees, magnolias, palmettos, and live oaks.

The soil of this section is generally fertile. The low plains near the coast are sandy and not so productive as the rolling lands further back, though many of the sea-islands are very fertile. The Lignitic Belt of Texas is quite equal to the lands of the upper Mississippi basin in fertility. Much of the Grand Prairie is sterile. The Llano Estacado is generally fertile when irrigated. The highlands of Arkansas are poor, but the river valleys are rich. The valley of the Mississippi has an inexhaustible alluvial soil.

#### PEOPLE.

This section is not so densely populated as the section previously studied. Can you tell why? The oldest settlement in the United States was made at St. Augustine, Fla., by the Spaniards, in 1565.

The demand for labor upon the plantations developed the system of African slavery to great proportions, until it was abolished during the Civil War in 1863. The black race still forms a large proportion of the population in all of these States. In South Carolina, Mississippi, and Louisiana the colored people outnumber the whites.

The people of these States have never been obliged to provide against the long and severe winters of the Northern States. For generations they had servants to perform even the slightest labors. This had a tendency to build up caste distinctions between those who could own slaves and those who could not. Their country within the last generation has been devastated by war. These

influences have had an enervating effect upon the people, from which they have been slow to recover. Within the last decade, the younger men of the community have thrown aside the prejudices of their fathers, have opened the South to northern enterprise and capital,



TEXAS HIGH SCHOOL.

and have made rapid strides for advancement. Education for the common people is receiving more attention. The colored people, too, are bettering their condition, through the influences of education. In all the schools for the colored people, and for the lower class of white people, industrial features are given great prominence.

#### OCCUPATIONS AND PRODUCTIONS.

Agriculture is the great industry of this section. The differences in the elevation present a great variety of lands and products,—the



COTTON PLANT.



RICE.

cotton and rice lands of the coast, the corn lands of the interior, and the wheat lands of the highlands.



The Coast States, with their rich soil, warmth, and abundant moisture, form the great cotton-producing region. Texas is the leading State in its production. The Yazoo Delta in Mississippi is the finest cotton land, and this State ranks second in the output of the product. The Sea Islands, along the coast of South Carolina, produce the finest quality of cotton, known as *Sea Island cotton*.

Corn is the next most important crop grown in this section, the yield per acre being greater than in the great corn States of the North. The largest yield ever gathered (256 bushels to an acre) was produced in the upper pine-belt of South Carolina.

Wheat, oats, hay, and tobacco are produced on the uplands.

The production of cane sugar is the leading industry in Louisiana. North Carolina and Tennessee produce a great deal of tobacco.



COTTON PICKING.

Rice, which requires lowlands that can be readily irrigated, is grown in the coast regions of Louisiana, the Carolinas, and Georgia.

Small fruits and vegetables are raised in large quantities for the early supply of the Northern markets.

In the northern part of this section apples and peaches are an important fruit product. Oranges form the principal fruit crop of Florida.

Lumbering is extensively carried on in the pine forests, notably in the Carolinas. Nearly every large city of the South has an extensive lumber trade and manufacture.

Manufacturing is rapidly increasing in these States. Georgia leads the South in this industry. Cotton goods are manufactured here more cheaply than in New England.

In northern Alabama there are extensive iron and steel industries. Alabama ranks second in the Union in the production of iron ore.



GATHERING THE GOLDEN FRUIT.

Lead-mining is important in Arkansas. The mountains of Tennessee are rich in iron and in beautiful marbles of great variety.

## CITIES AND TOWNS.

Locate each.

*New Orleans* (The Crescent City) is the largest city in this section, containing about 250,000 people. It is second only to New York in the extent of its export trade. It is the greatest market for raw cotton in the world. It also has extensive trade in lumber, sugar, rice, and cotton-seed oil.

Other important cotton and lumber markets are: *Charleston*, having the largest trade in naval stores in the world; also noted for the manufacture of men's clothing; *Savannah*, noted for its many parks, extensive shipping of melons and small fruits to Northern markets; *Mobile*, noted for its fine harbor and for the importation of coffee; *Houston*, at the head of Galveston Bay, and *Galveston* on an island at the entrance to the Bay; *Memphis*, noted for extensive machine-shops; *Shreveport*, *Vicksburg*, *Natchez*.

*Nashville* (The Athens of the South), the capital of Tennessee, is noted for its educational institutions, its commerce and lumber manufactures.

*Augusta* is the chief cotton-manufacturing city of the South.

Other cotton-manufacturing cities are: *Atlanta*, the capital of Georgia, noted for its fine climate and beautiful streets; it also has extensive lumber manufactures; *Macon*, noted also for its beautiful streets, which are laid out from 130 to 180 feet wide and supplied with an abundance of shade trees; *Knoxville*, fine climate, and in the center of the marble industries of Tennessee; *Chattanooga* and *Little Rock*, the capital of Arkansas, also noted for their fine climate.

*Birmingham* is the great coal-, iron-, and steel-manufacturing center of the South. *Montgomery*, the capital of Alabama, and *Chattanooga*, Tenn., also have extensive coal and iron industries, with cotton and lumber trade.

*Raleigh*, the capital of North Carolina.

*Columbia*, the capital of South Carolina.

*Austin*, the capital of Texas, noted for beauty of location and fine buildings.

*Dallas* and *Fort Worth* are important grain centers.

*San Antonio*, the largest city of Texas, has extensive wagon and carriage factories and a flourishing trade in the products of the herd.

*Key West*, the largest city of Florida, is noted for sponge and turtle fisheries. It is situated on an island of coral formation at the entrance to the Gulf of Mexico. It is an important naval station, being the most southerly port in the United States.

*Tampa* is an important Gulf port, and has large cigar manufactories.

*Jacksonville*, a popular winter resort, has a considerable trade in lumber.

*St. Augustine* is the oldest town in the United States.

The following cities are in the tobacco region of North Carolina, and have immense storehouses for this product: *Asheville*, also a noted winter resort; *Durham*; *Winston*.

*Tallahassee* is the smallest State capital in the United States and the only one that has no river connection.

*Baton Rouge*, the capital of Louisiana.

*Hot Springs*, in Arkansas, is a noted health resort. It takes its name from the large number of thermal springs in the neighborhood, varying in temperature from 72 to 150 degrees.

Name the important cotton markets; the lumber markets; the cotton-manufacturing cities, the iron-manufacturing cities; the cities noted for climate and beauty, or as health resorts; all of the State capitals; the principal seaports.

#### COMMERCE.

Commerce is carried on by sea, the coasting trade being very active. The harbors in general are not favorable to the entrance of large ocean vessels; hence trade with foreign countries is limited.

Locate the following important railroads: Louisville, New Orleans and Texas; Louisville and Nashville; East Tennessee, Virginia and Georgia (Queen and Crescent); Atlantic Coast Line; Texas and Pacific.

### THE WESTERN HIGHLAND AND PACIFIC STATES.

#### THE MINING AND HERDING SECTION.

##### LOCATION.

Two of the divisions of this section bordering on Mexico are territories. Name them. Name the nine States of the section. What three States border Canada? What three States border the Pacific Ocean? Name the States east of this section. What ocean west? Name the divisions surrounding each State and Territory. Estimate the area of each State by applying the scale of miles.

##### SURFACE.

What great mountain system crosses this section? What divisions are crossed by these mountains? What mountain range in Utah? What range between Montana and Idaho? What range in the western part of Wyoming?

In the northern part? What range in the eastern part of Idaho? Locate the Park Ranges, Fremont Peak, Longs Peak, Pikes Peak, Unita Range. In what direction does the latter extend?

What is the largest lake in this section? Name two other lakes in the same State. In the western part of Montana? Name two lakes in Nevada. Locate lakes Klamath, Goose, Tahoe, Tulare, Mono, Owens.



TILLAMOOK ROCK LIGHTHOUSE, OREGON.

What mountains extend across central Washington and Oregon? What mountains in the eastern part of California? In the southern part? What range extends along the western side of the Pacific States?

Locate Yosemite Valley, Death Valley, Yellowstone Park.

What five great river systems drain these States? What portion of the section has no drainage outlet to the sea? What four rivers rise in the mountains of Colorado? What river system drains the great part of Montana? Of Idaho? Of New Mexico? Of Arizona? Of Washington? Of Oregon? Of California? Name the principal affluent of each. What two rivers unite to form the Colorado? In what part of this section are there low plains?

*The Rocky Mountains.*—At the eastern side of this section we have the Great Western Plateau, reaching an altitude of from 5000 to 8000 feet at the foot of the mountains, which we may reach by a gradual incline from the valley of the Mississippi River. This plateau occupies about one-third of New Mexico, Colorado, and Wyoming, and about three-fourths of Montana.

From this plateau rise the Rocky Mountains, lofty and rugged. They reach their greatest height in Colorado, where there are about forty peaks over 14,000 feet high and hundreds about 12,000 feet high. Between the mountain ranges in Colorado are many valley plains, called parks. The mountain ranges of Colorado are called the Park Ranges.

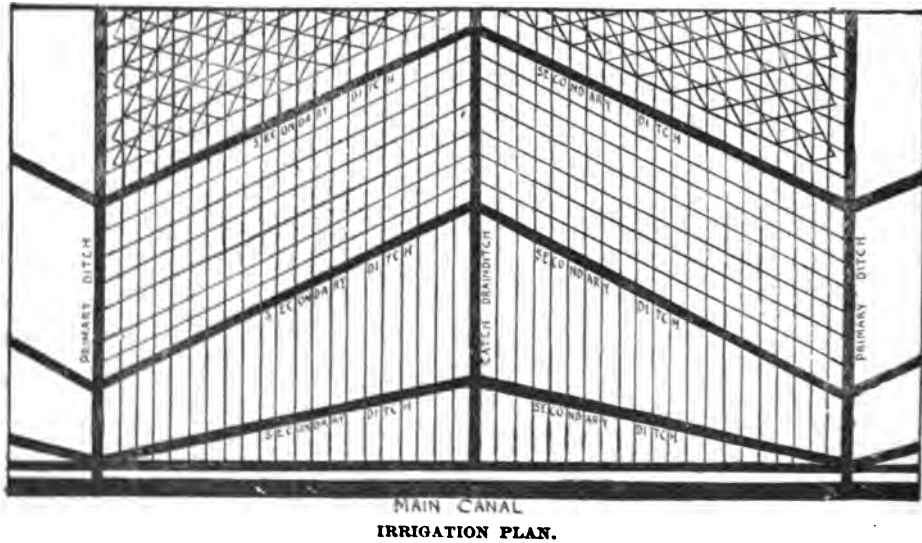
What is the latitude of Yellowstone Park? Find the same parallel in New England. What sort of winter would you expect on the basis of latitude? What is the latitude of Denver? What city on the Atlantic coast in the same latitude? What influence has Denver that would tend to make the temperature lower than in this city? What influence has the Atlantic city that would tend to make the same degree of cold more severe? What avenue for warm winds has Colorado? What is the latitude of the mouth of the Gila River? What city on the Atlantic coast is in about the same latitude? The Gila Valley is much hotter than the Atlantic seaboard in the same latitude. Can you tell why?

What gives southern California its tropical climate, and the low plains of Washington and Oregon their mild, temperate climate? These Pacific plains have very great rainfall. Can you explain why? Why have the plateau regions farther east so dry a climate? Why so very little rain in Nevada? What do you think of the healthfulness of this section? What parts might be unhealthy, and why? What tempering influence against extremes have the Pacific States?

#### SOIL, PRODUCTIONS, AND OCCUPATIONS.

The soil in the highland States is generally sterile because of the lack of moisture. The presence of moisture not only refreshes growing plants, but aids in the decay of those which have served their purposes, thus enriching the soil.

Irrigation is practiced in many parts of this territory. By this process water is conducted from the streams through canals to the fields that are under cultivation.



The greatest extent of irrigated land is in Montana and Wyoming. Colorado, California, and Idaho also have extensive irrigating canals. In the southern and western parts of the highlands the streams are sufficient to irrigate only a small fraction of the arable land. For a large part of the year such rivers as the Rio Grande and the Colorado are dry beds for about one-half of their course.

About one-seventh of the northern portion of the highlands may be considered agricultural territory. Northeastern Colorado, the Snake River Valley, and the valleys of Montana and Wyoming are rich agricultural districts. The low coast plains of the Pacific States have an alluvial loam, and are very productive. Throughout the cultivated areas, except in southern California, the products correspond to those of the Northern Agricultural Section. Can you give a reason why New Mexico should produce practically the same crops as Ohio, which is so much farther north? In southern California the productions are tropical, consisting of oranges, figs,



GOLD OF OPHIR ROSE BUSH.—200,000 ROSES.

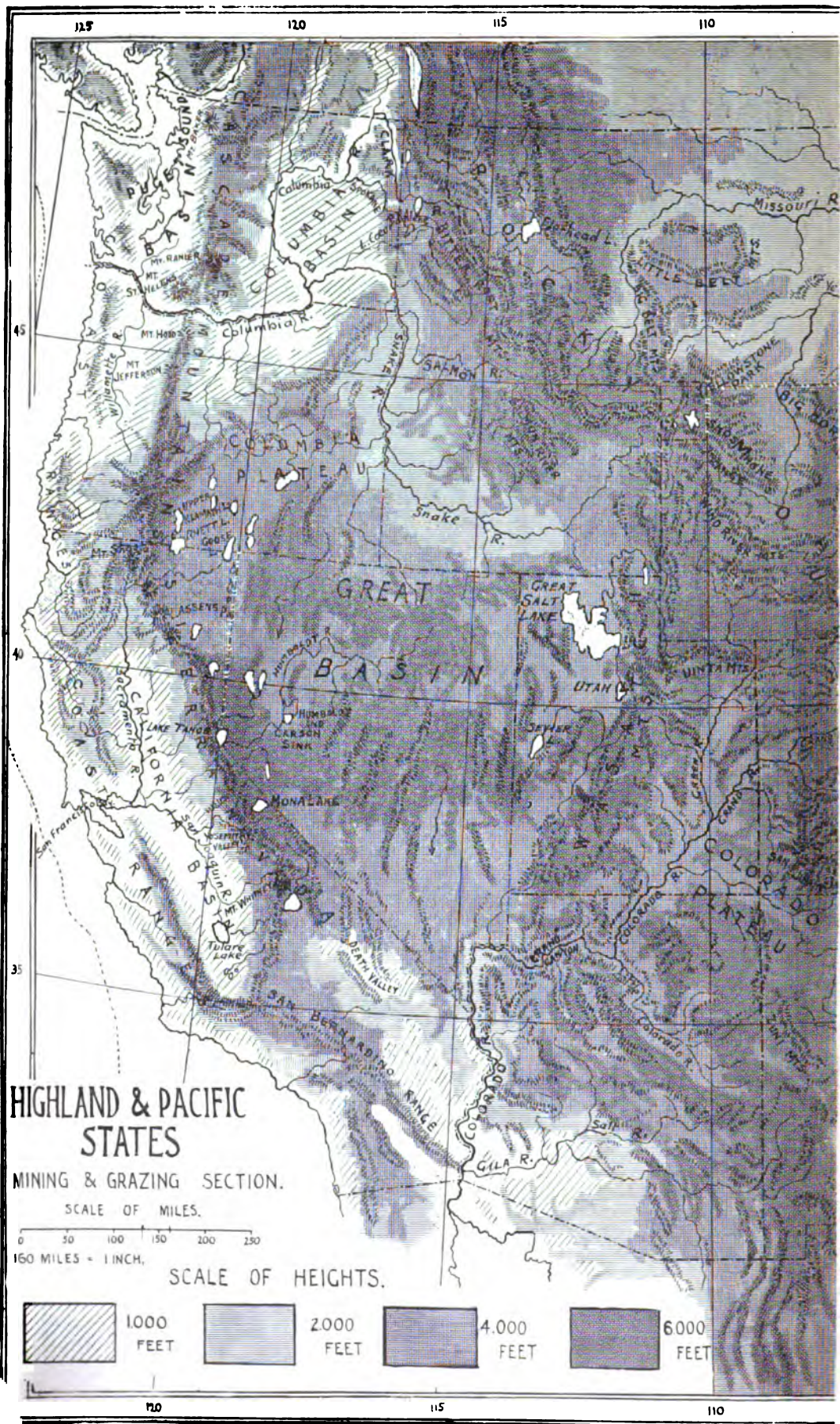
bananas, and small fruits of all kinds and in great luxuriance. California is called the Vineyard of America. It might with equal propriety be called the Flower Garden of America; for in no other place do flowers grow and bloom in such profusion. Hops are extensively grown in Oregon and Washington.

Pasturage is abundant almost everywhere, the grasses of the plateaus maturing with little moisture, and in many parts remaining nutritious for the herds through the winter. The middle plateaus and the lower mountain lands and plateaus of the north are the finest grazing districts. They support great herds of cattle and droves of sheep, which furnish meats for the Eastern markets.

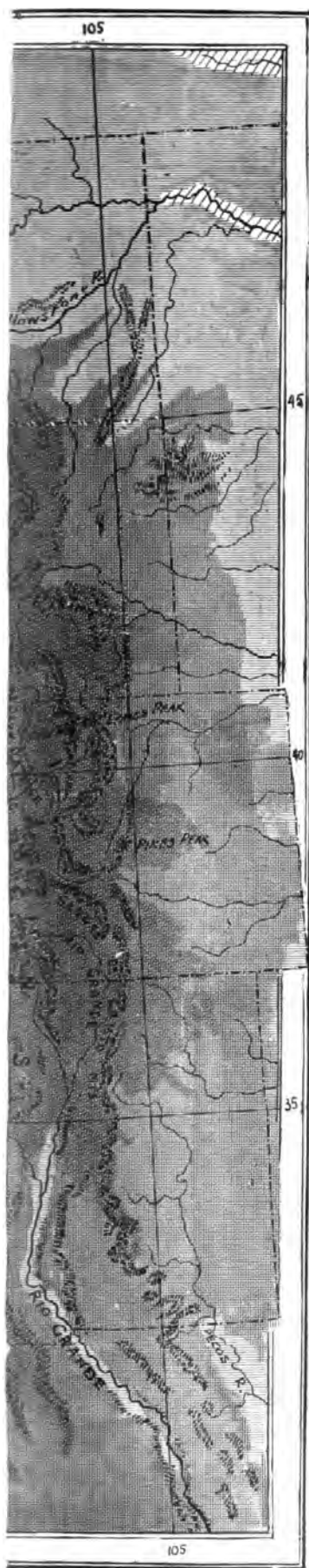
#### FORESTS.

The mountain slopes below the snow-line are covered with pine, spruce, and fir trees. The river valleys of the north abound in cottonwood, poplars, and willows. The Pacific lowlands are heavily timbered. Lumbering is an important industry in the western part of Washington and Oregon, in Colorado and in California. The plateaus are for the most part treeless. In the south they bear many varieties of cactus plants. What are the characteristics of the cactus?









Northward from Colorado, in southern Wyoming, there is a gap in the mountain system. Through this gap the Union Pacific Railroad passes. Farther northward the mountains rise in another system of rugged ranges, called the Geyser System. These show most recent signs of volcanic action, in lava beds, hot springs, and geysers. Yellowstone National Park, reserved by the government of the United States, in the midst of this system, contains the largest number of geysers and hot springs of any territory in the world. Besides these, the park contains lofty mountains, beautiful lakes, and the falls and cañons of the Yellowstone River. At the Upper Falls the water descends 110 feet, and a quarter of a mile below makes a plunge of 310 feet to the bottom of the cañon.

Southward from Colorado the Rocky Mountains become smaller and smaller, extending into Mexico in the Guadalupe Ranges, while west of the Rio



LICK OBSERVATORY.

Grande River rise the more lofty ranges of the Sierra Madre, which form the chief system of Mexico.

*The Plateau Region.*—West of the Rocky Mountains is a great plateau drained by the Colorado River and its tributaries. It varies in height from 6000 to 11,000 feet, extending westward to the Wasatch Mountains. What parts of Wyoming, Colorado, Utah, New Mexico, and Arizona are each included in this plateau region? The more elevated parts of this region are well watered, and from these and from the mountains the rivers receive their supply. The lower parts are arid, and there is consequently but little erosion outside of the river bed. Therefore, the river has gradually cut its way down in narrow gorges thousands of feet. These gorges are called Cañons. The Grand Cañon of the Colorado is 6000 feet deep. Locate the Grand Cañon. The tributaries of the Colorado, the Rio Grande, and the rivers of the plateau east of the mountains have formed cañons in the same way.

*The Great Basin.*—Between the Wasatch Range and the Sierra Nevada in California is the Great Basin. This territory has no drainage outlet to the sea. Very little rain falls in this region (see Table







of Rainfall). The lakes of Utah and Nevada receive such waters as escape from the arid, thirsty ground. What part of Utah belongs to the Great Basin? What part of Idaho? What part of Nevada? Note the direction of the mountain ranges of Nevada. These are called the Desert Ranges.

Great Salt Lake is the remnant of a much larger lake. This is shown by the great number of terraces in the old basin which mark the shore of the lake in the different stages of its decline.

Northwest of the Great Basin is the *Columbia River Basin*, including the tablelands of Idaho and those of the southeastern half of Oregon and the fer-



TALUS CONES.

tile valleys of the Columbia River and its affluents. The river breaks through the great Cascade Mountain System, which continues on to the Sierra Nevada, forming the western boundary of the Great Basin. In this system are several peaks as high as those of the Rocky Mountains. Locate Mount Rainier, the highest peak in the United States, Mt. Shasta, Mt. Hood, Mt. Baker, Mt. Adams, Mt. Whitney.

West of the Cascades and Sierra Nevada the surface descends very abruptly almost to sea-level. We have the broad valleys of the Puget Sound Basin, the lower Columbia, the Sacramento, and San Joaquin. Between these and the coast the surface rises again in a series of low ranges, broken by many cross valleys and by San Francisco Bay.

The heavy rainfall on the western slopes of the mountains causes great erosion; the soil is washed down the mountain side, and as there are no large rivers to carry it away, it forms spreading, fan-shaped heaps of alluvium, against the mountain wall; such a deposit is called a *talus*. Look for talus cones and alluvial fans in the vicinity of your home.

The Pacific slope is remarkable for its wonderful trees. The Sequoia includes the redwoods of the coast range and the so-called "Big Trees" of the western slope of the Sierras. Both kinds are evergreens and belong to the cypress family. They grow to more than 300 feet in height and over 30 feet in diameter. Some of them have been estimated to be more than 2000 years old. There are several groves of Big Trees, the most noted being the Mariposa Grove near the Yosemite Valley. Here is the Grizzly Giant, 93 feet in circumference.

#### MINERALS.

The mineral wealth of these States is very great. Gold, silver, copper, coal, and iron are found in nearly all parts of the section, and mining is the great industry. California ranks first in the production of gold and quicksilver; Colorado in silver and lead, producing about one-third of the lead found in the United States. Montana is the second State in the production of silver, and is second, possibly equal, to Michigan in the mining of copper. Arizona also has productive copper mines. These three States produce nearly one-half the copper of the world. Colorado, New Mexico, and Arizona have beds of anthracite coal. New Mexico is rich in precious stones, such as emeralds, turquoise, sapphires, garnets, and opals. Large deposits of gypsum, soda, alum, and kaolin are found. Montana also has fields of rubies and sapphires. Wyoming has extensive petroleum fields and coal mines.

#### ANIMALS.

See animal map. What conditions in these States are favorable to the existence of wild animals? What beasts are found dangerous to man? What ones that prey upon other animals? What animals valuable for food? What ones valuable for fur? What animals found in the south not found in the north? What ones found in the north not found in the south? What animals seek the mountain fastnesses? What ones are found on the prairies?

Salmon are abundant in the Columbia River and its affluents.

#### PEOPLE.

The inhabitants of these States present great differences of race and characteristics. Arizona, New Mexico, and southern California are parts of old Spanish territory, and many of the people are of Spanish origin. The remainder of the section has been settled chiefly by immigration from the States farther east. Many Indian tribes are scattered over these States, living upon their reservations. California has a large Chinese population.

Many of the early settlements were made by the Mormons, who sought relief from religious persecution. They founded Salt Lake

City as their religious center, where they built a great temple. They still form the majority of its population, and have large representation in Idaho, Wyoming, Nevada, Colorado, and the Territories. The conspicuous feature of their religion was the practice of polygamy, which permitted a man to have several wives. This practice was forbidden by the laws of our country, and was the cause of so much trouble to the Mormons themselves that the authority for its



A VILLAGE OF AMERICAN INDIANS.

practice has been revoked, and polygamy is no longer sanctioned by the Mormon Church.

The discovery of gold in California stimulated emigration from the East and led to the discovery of the wonderful climate possessed by the whole Pacific coast.

California has furnished the natural gateway for the entrance of people from Asia, and many Chinese availed themselves of the opportunity until their further immigration was prohibited by act of Congress. California has about 75,000 Chinese.

Outside of the great centers of San Francisco and Denver and the growing Puget Sound Basin, the territory is sparsely populated. California has about as many inhabitants as all the remainder of the section, which is about equal to that of Chicago. Colorado stands next in number of inhabitants, but does not exceed the number in Boston, Baltimore, or St. Louis.

## CITIES.

Locate each.

*San Francisco* is the largest city west of the Mississippi River. It is noted for its beauty of location, its excellent harbor, fine streets, buildings and parks, great manufacturing and commercial interests.

*Oakland* is to San Francisco what Brooklyn is to New York.



STREET IN LOS ANGELES IN WINTER.

*Los Angeles* and *Santa Barbara* are centers of fruit-growing regions, and are noted for luxuriance of tropical vegetation and flowers.

*Stockton* is the center of trade for the San Joaquin Valley, which is 100 by 300 miles, and is one of the most prolific agricultural districts in the world.

*Seattle*, *Portland*, and *Tacoma* are great lumber markets and have varied manufactures.

*Spokane* at Spokane Falls and *Walla Walla* (Many Waters) are the great flouring cities of the Pacific, and are noted for their great water power.

*Astoria* is noted for its salmon canneries.

*Denver* (The Queen City of the Plains) is the metropolis of the mountain States. It is located just one mile above sea-level. It is noted for its beautiful mountain views, its healthful climate, and its fine public buildings. It is a great railroad, mining, and live-stock center. A branch United States Mint is located here.

*Colorado Springs* is a prominent health resort and railroad center.

*Pueblo* has the largest iron and steel-works west of the Missouri River. It is a mining, live-stock, and oil center.

*Leadville* is noted for its extensive United States trout hatchery.

*Salt Lake City* is the center of the Mormon religion.

*Helena* is in the midst of a mining district of gold, silver, and iron, and fields of rubies and sapphires.

*Butte City* is the center of immense copper and silver mines.

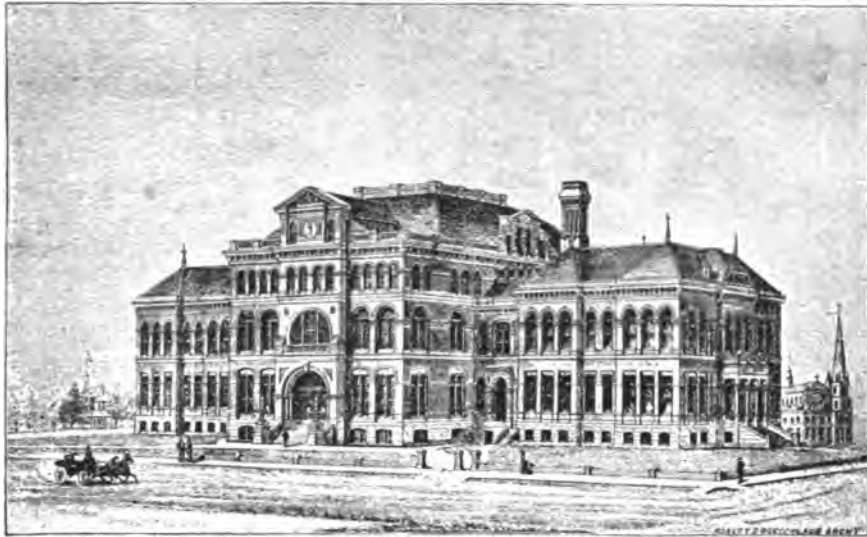
*Cheyenne* is noted for great railroad shops and cattle market.

*Santa Fe* is next to St. Augustine the oldest town in the United States. It existed as an Indian city before St. Augustine was founded. It is noted for its curious and ancient structures.

Locate also, *Ogden*, *Virginia City*, *Laramie City*, *Albuquerque*, *Tucson*, *Yuma*, and the capital of each State and Territory.

## COMMERCE.

Only the Pacific States have natural means of commerce, since rivers are navigable only within their boundaries. The Columbia is navigable to the Cascades, the Sacramento to the city of Sacramento, the San Joaquin to Stockton.



DENVER HIGH SCHOOL.

Compare the Pacific with the Atlantic coast with reference to its harbors.

Several lines of railroad connect the cities of the Central States with the Pacific coast.

Locate the Union Pacific; Southern Pacific; Atchison, Topeka and Santa Fé; Northern Pacific.

## POSSESSIONS OF THE UNITED STATES.

## ALASKA.

## LOCATION AND OUTLINE.

In what part of North America is Alaska? What strait separates it from Asia? How wide is this strait? What waters does it connect? What islands between Bering Sea and the Pacific Ocean? Locate the peninsula of Alaska, Prince of Wales Cape and Peninsula, Cook Inlet, Kadiak Islands, Pribilof Islands. The coast-line of Alaska is longer than that of the Atlantic coast of the United States. Why?

## SURFACE.

The Rocky Mountain Highland spreads out into two principal ranges in the northern part, forms Cape Prince of Wales Pen-



insula, and is continued in the highlands of Asia. The other range crosses the southern part along the coast, graduating from volcanic peaks to the rugged Alaskan Peninsula and the long line of Aleutian Islands. An Arctic coastal plain, consisting of tundras, lies along the northern coast. Another coastal plain on the southwest has been largely formed by the great river. The archipelago

west of British Columbia is called the Sitka District.



ICEBERG, GLACIER BAY, ALASKA.

The perpetually snow-clad mountains are the source of many and wonderful glaciers, which are distinguishing surface features of this country. Many of them extend in broad sheets to the sea, others reach the sea through fiords, where the pressure of the water underneath causes masses to break off, forming numberless icebergs.

What large river drains about two-thirds of the area of Alaska? Trace the limit or boundary of its basin. Describe its course. What is its length? How do its basin and its length compare with other North American rivers?

For six hundred miles from its mouth the Yukon is over a mile wide. It carries a heavy burden of silt, brought to it by the glacial streams which continually keep up its great volume. As that part of Bering Sea where the Yukon enters is shallow and without strong currents, the river has built a delta as large as that of the Mississippi, and its many mouths spread out for seventy miles on the coast. The volume of water is so great that the water is fresh for ten miles from the shore. This river is subject to annual floods and ice-gorges, when the tree-covered banks are cut away and great quantities of driftwood are contributed to the river.

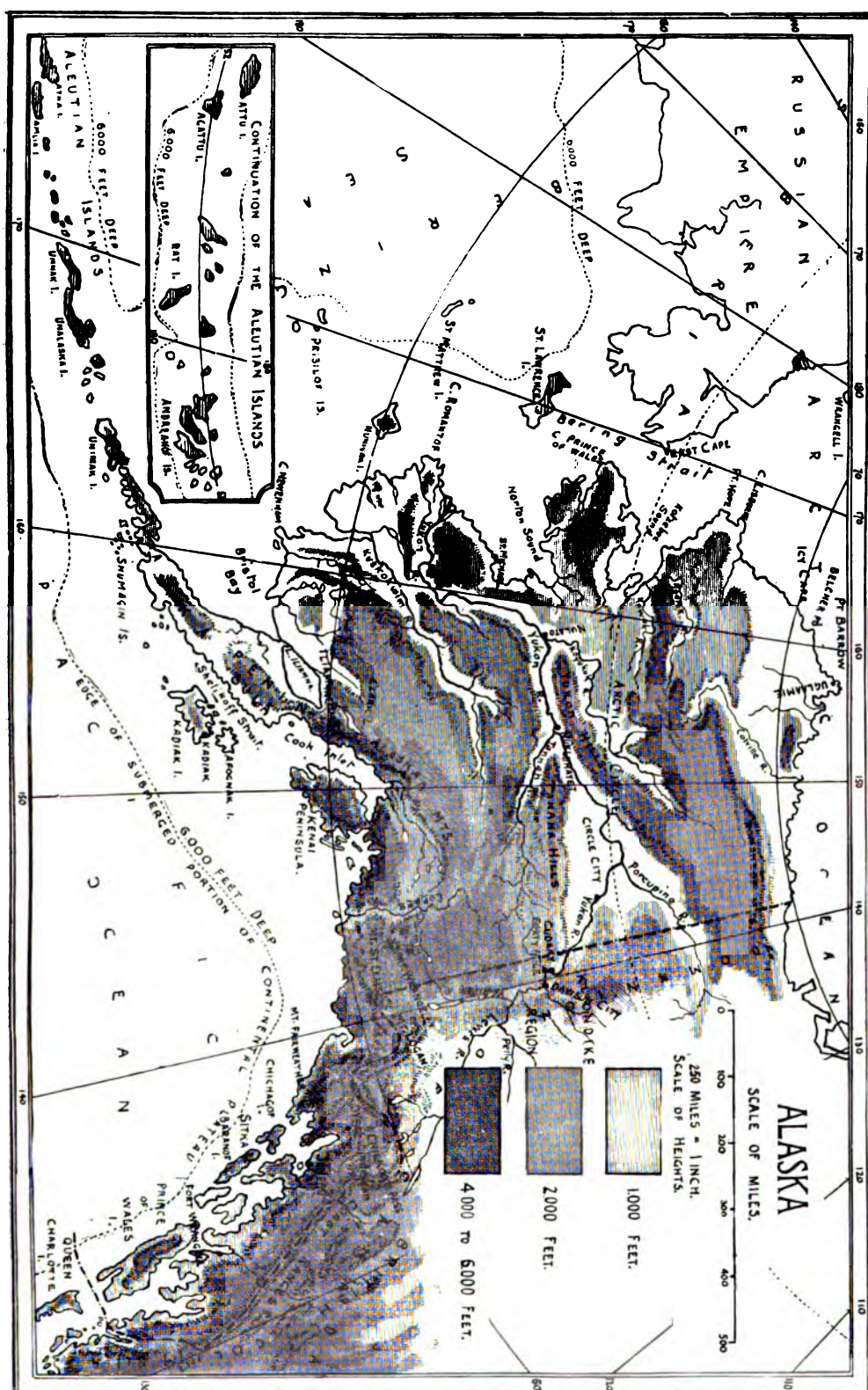
The Arctic Plain is treeless; the Alaskan Mountains and the Sitka Islands are covered with fine forests.

#### CLIMATE.

Where does the Arctic Circle cross Alaska? What current in the Pacific has a tempering influence upon its climate? Why does it have little effect upon the northern plain? The climate of the Sitka Islands is quite mild in temperature and they have abundant rainfall.

How does the long night affect the winters of this country? How does the long day affect the summers? When can the people see the sun at midnight? Why can it be seen?

The snow-capped mountains and great precipitation furnish the right con-





ditions for forming the glaciers which can be seen anywhere on this coast. Both Mount St. Elias and Mount Logan are the sources of many such ice-streams. Why is it easier to visit these than those of Greenland?

#### THE PEOPLE AND THEIR OCCUPATIONS.

The people of Alaska in 1890 numbered about 30,000, one-seventh of which consisted of whites. The Aleuts and Eskimos comprise



ESKIMO FAMILY AND DOGS.

about two-thirds of the population. They maintain themselves almost entirely by fishing and hunting.

The Pribilof Islands are the rendezvous of the fur seal. Here they come in large numbers every summer to rear their young. The destruction of these valuable animals in past years has been enormous. The taking on land is limited by the government; but they are hunted and killed in great numbers at sea. Many of those killed in the water are never secured. Most rigid restrictions are placed upon seal-hunting; but the animal is likely soon to become extinct. The most valuable exports are the furs of seal, bear, otter, marten, beaver, and mink. Why is the fur of northern animals so valuable? Next in importance are fish. Canned salmon is largely exported.

Gold is mined in several places; lignite and copper abound. The recent discovery of the rich Klondyke gold fields near the

border of Alaska and the British possessions, has stimulated immigration into this district and brought Alaska into closer relations with our Pacific States.



IN THE KLONDYKE.

Sitka is the capital and chief town. It contains about 1500 inhabitants. On what island is it situated?

### THE WEST INDIES.

(See map of Mexico, Central America, and West Indies.)

How are the West Indies located with reference to North and South America? What sea do they inclose with Central America and South America? What group of islands north of them? To what country does this group belong? Name the four largest islands composing the Greater Antilles. Which one is nearest the United States? Which one is farthest removed? What strait between Cuba and Florida? Between Cuba and Yucatan? Between Cuba and Haiti? Between Haiti and Porto Rico? Where are the Lesser Antilles? To whom do they belong? What two divisions in the island of Haiti? Name the capital of each. Locate Jamaica. To what country does it belong? Name its capital.

These islands are of volcanic and coral formation. They bear the same relation to the isthmian highlands that the secondary highlands of the continent of North and South America do to the primary highlands.

### CUBA.

#### LOCATION.

How far is Cuba from the southern point of Florida? What is its length? What its greatest width? What cape at the western extremity? At the eastern extremity? On the southern coast? Locate the Gulf of Matamano. Name the six divisions of Cuba. What is the chief city of each province?

## SURFACE.

A range of highlands, the Copper Mountains, extends the entire length of the island. The highest peak, Pico Turquinos, in the Sierra Maestra Range, Province of Santiago de Cuba, is 1000 feet higher than the highest of the Appalachians. From the mountains the land slopes in both directions, forming broad rich meadows along the coast. Generally the coast is low and flat, paralleled with reefs which make it dangerous for shipping. On the north side there are many large lagoons. What river drains the southeastern part? About how long is it? It is navigable for about half its length. Describe the Gonzalo River. Spurs from the mountains stretch



A SCENE IN CUBA.

toward the coast in many places, forming headlands, and the drowned valleys furnish many fine harbors. From the description and shape, can you tell the formation of Cuba?

## CLIMATE.

What circle passes near Havana? What influences operate to reduce the natural heat of this latitude. What two seasons? When is the hot wet season? When the cold drier season?

When the sun is north, the warm northeasterly trades blow, making the coasts very hot; the rainfall is enormous. When the sun is south, the cool southwesterly trades blow, and the climate is cooler; frosts often occur on the mountains, but snow is unknown.

The coasts are unhealthful; yellow fever prevails, with great loss of life every summer. In the mountains the climate is temperate and healthful and yellow fever is unknown. Hurricanes occur in the fall, but do not often reach so far west as Cuba.

#### LIFE.

The animal life of the island is similar to that of the continent. Domestic animals are reared in great numbers. The woods abound in birds of beautiful plumage. The rivers and inlets are rich in fish, and the coasts are infested with noxious insects and spiders.



A PINE APPLE FIELD, CUBA.

The forests are very heavy and furnish valuable woods, such as ebony, rosewood, cedar, and mahogany. The fruits common to the tropics are found here.

#### OCCUPATIONS AND PRODUCTIONS.

Agriculture is the chief occupation, by which sugar, tobacco, coffee, maize, rice, bananas, and sweet potatoes are grown. The mountain grazing lands support immense herds of cattle.

The island is rich in minerals. A fine quality of bituminous coal is found, and copper is mined extensively in the Sierra Maestra Mountains, in the southeastern part.

#### PEOPLE.

The inhabitants were of four classes: the native Spanish, who were the ruling class; the creoles, who were the planters, farmers, and lawyers; the free mulattoes and negroes, who were excluded from all civil offices; and the slaves.

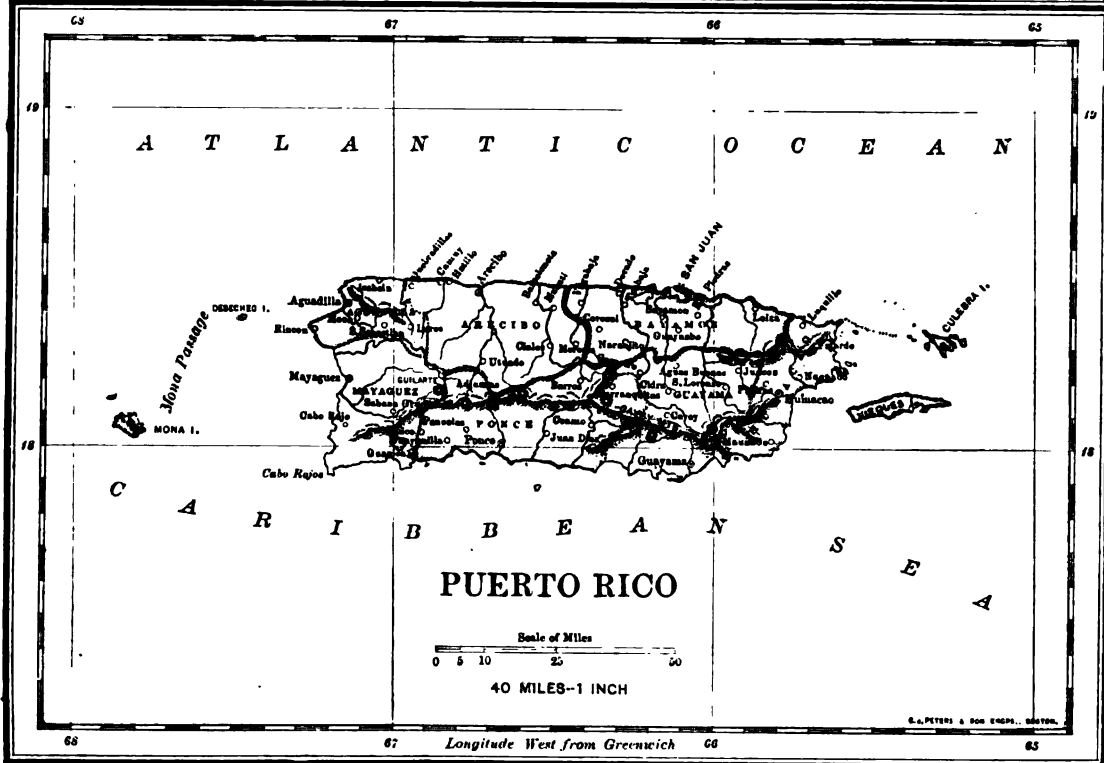
Cuba has recently become an independent government under the protection of the United States, under whose patronage she will doubtless enter upon a more liberal governmental policy, with the promise of a new era of prosperity.

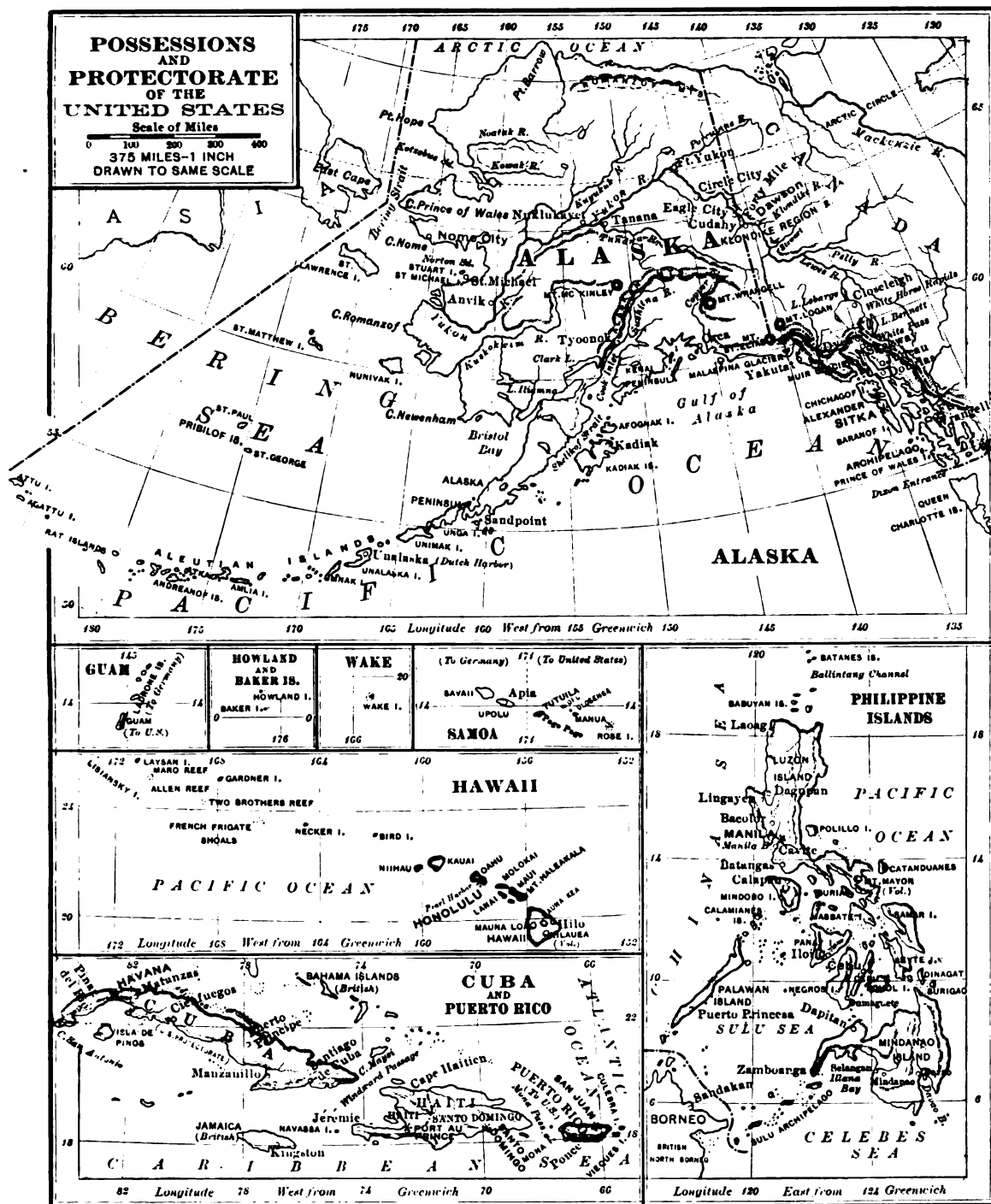
*Education* is in a very backward state. It is estimated that not one-tenth of the children of free parents receive any education whatever.

The old government tolerated the Roman Catholic religion only.

#### CITIES.

*Havana*, the capital, is one of the chief commercial cities of the Western Hemisphere. It has one of the finest harbors and some of





the most beautiful parks and promenades in the world. It was founded in 1519, only twenty-seven years after the discovery of America. It has an immense trade in tobacco and sugar. What city of the United States is about equal in population?

*Santiago* has a fine harbor and beautiful mountain surroundings. It is the center of the copper industry.

*Matanzas* is the second city on the island. It has a large trade in sugar and molasses.

*Puerto Principe* is in the center of a great herding district, the products of which form the basis of its trade.

Locate the above; also, Cienfuegos, Manzanillo, Cardenas, Holguin, each of which contains over 25,000 inhabitants.

### PORTO RICO.

Locate it with reference to the Greater Antilles group. What are its latitude and longitude? What are its length and breadth? Estimate its area. Compare it with the State of Delaware in size.



A NATIVE CABIN, PORTO RICO.

The surface is quite elevated; a low mountain range extends easterly across it, spurs from which separate fertile valleys.

The climate is pleasant, although it is subject to the terrible hurricanes which prevail in this locality during the autumn.

The island is nearly all under cultivation, and supports the most dense population on the Western Continent.

The leading occupations are agriculture and herding. Sugar, coffee, cotton, and tobacco are the chief exports.



What change has recently been effected in the government of this island, and how?



PREPARING COFFEE FOR MARKET.—PORTO RICO.

Name and locate the capital. Locate Ponce, the largest city; Guayama.

## THE HAWAIIAN OR SANDWICH ISLANDS.

### LOCATION.

In what ocean are these islands? In what part of this ocean? In what direction does the group extend? Name the largest island. On what island is Honolulu, the capital, situated? What island northwest? Name three islands between Hawaii and Oahu. Compare Hawaii with your own State in size. What are the latitude and longitude of Honolulu? How far is it from San Francisco to Honolulu?

### SURFACE.

These islands are all of volcanic origin; except those upon the island *Hawaii*, the craters are extinct. *Mauna Kea*, in the northern part of Hawaii, is over two and a half miles high, and the highest point in the Pacific Ocean; *Mauna Loa*, in the central part, is an active volcano, nearly as high. On the west and northwest of the island Hawaii are two other mountains a little more than half as high. The surface consists of the slope from these mountains and the interior plain, all of which has been formed by lava streams.

*Kilauea*, a volcanic hill in the southeastern part, has the largest crater in the world, seven miles long and three miles wide and from one to two thousand feet deep.

*Oahu* is traversed by two parallel ranges of low mountains with a low plain between them. This island has a great variety of beautiful scenery in its mountain cliffs, waterfalls, and verdant valleys. Along the coast stretches a coral reef about a half-mile wide in many



BLACK AND WHITE GOONIES, HAWAII. (REARED FOR THEIR GUANO.)

places. Old coral reefs are found over one hundred feet high, which give evidence of land upheaval.

The city of *Honolulu* is built upon an upheaved plain of coral formation.

*Maui* is composed of two mountains, connected by a sandy isthmus, so low that by a slight depression the island would become two islands.

*Kauai* is circular in shape, with a mountain in the center rising to the height of about a mile. West of the mountain is a high tableland extending to the sea. Volcanic action has been so long extinct that the lava beds are much decomposed, rendering the soil fertile.

#### CLIMATE.

What temperature would we expect in this latitude? What influence operates to lower the temperature? What regular winds blow here, and in what direction? These winds blow for nine months of the year. Nearly all of the islands have mountains on their northeast side. How does this affect these winds? Where

would we expect most rainfall? The southern slopes tend to be warm and sultry. Why? Why would the islands have better climatic conditions if the long slopes were toward the north?

#### LIFE.

The animal and plant life presents many unique species. Of about a thousand species of plants growing on these islands, more than half are found nowhere else. Give a reason. The windward slopes and ravines are covered with forests which yield valuable



THE PALACE, HONOLULU.

ship-timber; the leeward slopes are nearly bare. Can you give a reason? The cocoanut palm grows in abundance on the coast.

#### OCCUPATIONS AND PRODUCTIONS.

Agriculture and stock-raising are the chief pursuits of the people. Sugar is the staple crop. Rice is also extensively raised. The grains and vegetables of the temperate zone can be grown, but are not profitable, for want of market. Where would wheat be grown? Where corn? Where the sugar and rice?

Many of the smaller islands are used exclusively for sheep pasture. Wild cattle abound among the mountains of the large islands; these are trapped and hunted for their hides, which form an important export. Wild goats and wild hogs also roam the mountains.

#### PEOPLE.

The population of the islands is about 60,000. Name a city near you having about an equal number. About half of the people are

native Hawaiians, supposed to be a branch of the Malay line of the Mongolic Race. There are many Chinese and Japanese and an increasing number of Americans and Europeans.

Leprosy is a prevalent disease among the natives, and a colony of those afflicted has been formed on the island of Molokai.

The islands were visited by missionaries in 1820, and Christianity soon took the place of the idol worship and its horrible rites.

Education has received great attention since the advent of Christianity, and there are few inhabitants unable to read and write.

Until 1891 Hawaii was an independent kingdom; at that time a revolution occurred, and a republican form of government was established. When and how did it become a dependency of the United States?

*Honolulu* has a population of about 20,000. It presents the most civilized appearance of any of the Pacific island cities. It has a fine harbor and lies in the path of commerce. It is noted for its salubrious climate, beautiful tropical vegetation, and its progressive spirit.

*Hilo*, the second town of the islands, is the center of a fine agricultural region. It is noted for great rainfall, 80 inches per annum. Honolulu has only half as much. Give a reason for the difference.

## THE PHILIPPINE ISLANDS.

This group comprises thirty-three islands varying in area from 100 to 41,000 square miles, and many smaller ones.

### LOCATION.

Near what continent are they? What direction from it? What sea separates them from the continent? What island near the continent, belonging to the same elevated sea bottom? What large island southwest of this group? What sea is included between this island and the Philippines? What sea south of the Philippines?

Name the largest island of this group. About how long and how wide is it? Compare it with your own State in size. How many gulfs or bays can you find on its coast? Name and locate two of them. What natural land form in the southeastern part? Name and locate its chief city. What are its latitude and longitude? Compare the longitude with that of San Francisco. What is the second island in size? What irregularities in its coast line? Name five large islands between Luzon and Mindanao. What city on Panay? About what is the length and greatest width of Palawan?

### SURFACE.

These islands are of volcanic origin. They contain several active peaks, and are often visited by violent earthquakes. The mountains have an elevation of about 7000 feet; but in this latitude are covered with forests to their summits. Describe the surface of Luzon. Where are the mountains and the main slope of Mindanao? Note the continuation of the mountain ranges of Luzon in the chains.

of islands and the mountains of Mindanao. A farther elevation of the submarine plateau with erosion from the uplands would convert the whole group into a single island similar to Luzon in general surface features.

#### CLIMATE.

Through what range of latitude does the group extend? Compare with West Indies in latitude. What ocean current sweeps upon the eastern shores? With what effect? What winds influence the temperature of the valley of Luzon, and how?

The climate is for the most part very hot, and the air is full of moisture. The rainfall is very great. There are three seasons: the cold, the hot, and the wet. To what season of ours does the cold season naturally correspond in time? The hot season lasts from



A COAST VILLAGE.—TYPICAL PHILIPPINE SCENE.

March to June, after which the southerly monsoons temper the heat and the wet season prevails, during which the rain descends in torrents.

The northern islands are in the path of the Typhoon, a violent and destructive whirlwind peculiar to this locality, similar to the whirlwinds of the West Indies. It occurs the latter part of the summer.

#### PRODUCTIONS AND OCCUPATIONS.

The fertile soil, the abundant water, and the hot moist climate contribute to produce a vegetable growth unsurpassed. The forests yield teak, ebony, and cedar. Breadfruit, cocoanut, orange, tama-

rind, and other fruits grow in profusion. Hemp and tobacco are staple cultivated crops. Cotton, sugar, coffee, rice, indigo, and spices are also produced. Domestic animals of all kinds are reared in large numbers. Nine-tenths of the native animal life consists of species peculiar to these islands. Rich deposits of minerals are found, especially copper and coal; but little use is made of them. The chief exports are sugar, Manila hemp, and tobacco. The imports are cotton, woolen, and silk fabrics, iron and steel goods, machinery and provisions.

#### PEOPLE.

The original inhabitants were negritos similar in characteristics to the African negro. Many of them remain; but they are mostly confined to the interior of the islands, where they live a savage life. They are fast giving place to the stronger Malay immigrants, or are losing their individuality by mixing with the newer comers. The population of the group is estimated at about 8,000,000. The religion is Roman Catholic.

The great occupations are agriculture and fishing.

These islands were discovered by Magellan in 1521. What was notable about his voyage? Spain took possession of the islands and has held them until recently. How did Spain lose possession of them? How are they now governed?

*Manila*, the capital, has a population of about 20,000; it is noted for the manufacture of cigars. Manila Bay is famous for the most remarkable naval battle of modern times. Tell what you can about this battle.

Locate Batangae, Balayan, Lingayen, Dumaguete, Iloilo, Cagayan, Mindanao.

#### GUAM.

Where are the Ladrone Islands? In what latitude are they? In what longitude? (See map, p. 31.)

The group contains fifteen small islands, only four of which are inhabited. By the treaty between the United States and Spain in 1899, Guam, the largest and most southerly of the group, was ceded to the United States. It contains the chief town of the archipelago, San Ignazia de Agana. Of what advantage to the United States is the possession of this island?

#### TUTUILA.

Find the Samoan Islands on maps pp. 31 and 312. In what latitude are they? In what direction from the Hawaiian Islands? From the Philippines? From Australia?

This group contains fourteen islands, only three, Savaii, Upola, and Tutuila, being of any considerable size or importance. By treaty, ratified in January, 1900, Tutuila passed into possession of the United States. It contains 54 sq. mi. and is almost divided by Pago-pago Bay, which forms one of the finest harbors in the South Pacific. Of what advantage is its possession to our country?

## BRITISH AMERICA.

### LOCATION.

What part of North America does British America occupy? What country bounds it on the south? What division and what ocean west? By what other oceans is it washed? By what two bays is it nearly divided? What large gulf in the southeast?

Compare British America with the United States in size. What four divisions border on James Bay? What two on Hudson Bay proper? What three on the Arctic Ocean and its arms? What one on the Pacific? What one on the Great Lakes? What island province within the Gulf of St. Lawrence? What island province helps to inclose it? What peninsular province in the southeast? What division in the northeast bordering the Atlantic? What province between the Gulf of St. Lawrence and the United States? What seven divisions border the United States? What two divisions have not been referred to above? In what part of British America are they?

All of the divisions except Newfoundland and Labrador are united under one government, the Dominion of Canada. The seven provinces of Canada, similar to our States, are Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward, Manitoba, and British Columbia. Newfoundland and Labrador form a separate province. The other divisions are thinly peopled districts similar to our Territories.

### COAST-FORMS.

What connects Hudson Bay with the Arctic Ocean? With the Atlantic Ocean? What group of islands north of British America? Name six of these islands. What large island at the entrance to Hudson Bay? What island southwest of British Columbia? What group west? Locate Anticosti Island, Melville Peninsula, Boothia Peninsula, Bay of Fundy, Strait of Belle Isle, Cape Chidley, Cape Race.

### SURFACE.

What highlands in the western part of Canada? In the eastern part? What lies between these highlands? What two mountain peaks in the western part of Canada? What two near the boundary of Alaska? Which is the highest peak of North America? How high is it?

What river flows in the valley between the Laurentian and the Appalachian Highlands? What chain of lakes, waterfalls, and rapids in its course? Name its principal affluent. Trace the divide between the Hudson Bay and the St. Lawrence basins. Between the Hudson Bay and the Mackenzie basins. Describe the Mackenzie. What three large lakes in its basin? Name three different affluents of the Mackenzie.



What large river flows into Hudson Bay? In what large lake does it take its source? What large Canadian river flows into this lake? What one from the United States? What river drains British Columbia? Into what does it flow? What mountains does it gap? Why are there so many lakes in central Canada? How were they formed? Which of the United States has a similar surface? As Canada was under the ice-sheet, what kind of a surface must it present, except in the richer river valleys and old lake bottoms?

Which of the Canadian rivers are of the most importance? Why is the Mackenzie of so little value? What river of the United States rises in the Rocky Mountains in Canada?

*The St. Lawrence.* The head of tide-water on the St. Lawrence is at Montreal, which is nearly a thousand miles from the ocean proper.

Below Montreal is one of the best examples of a drowned river system. The old channel can be distinctly traced on the submerged continental plateau until it drops into the deeper waters of the ocean. The old valleys have become bays, gulfs, and estuaries, and the canyons narrow tide-ways. The highlands between the former river valleys, when not entirely submerged, have been transformed into capes, headlands, peninsulas, and islands.

This estuary of the St. Lawrence, reaching far inland, made an easy passage-way for the early explorers. The undrowned portion and its connection with the Great Lakes tempted the Jesuit missionaries to make canoe journeys into the very heart of the continent. This led to the establishing of trading posts and missions along the Great Lakes and the Mississippi valley, before other routes were known.

The St. Lawrence extends into the very heart of the agricultural and forest sections of the continent. How has its deep waterway influenced industries and trade?

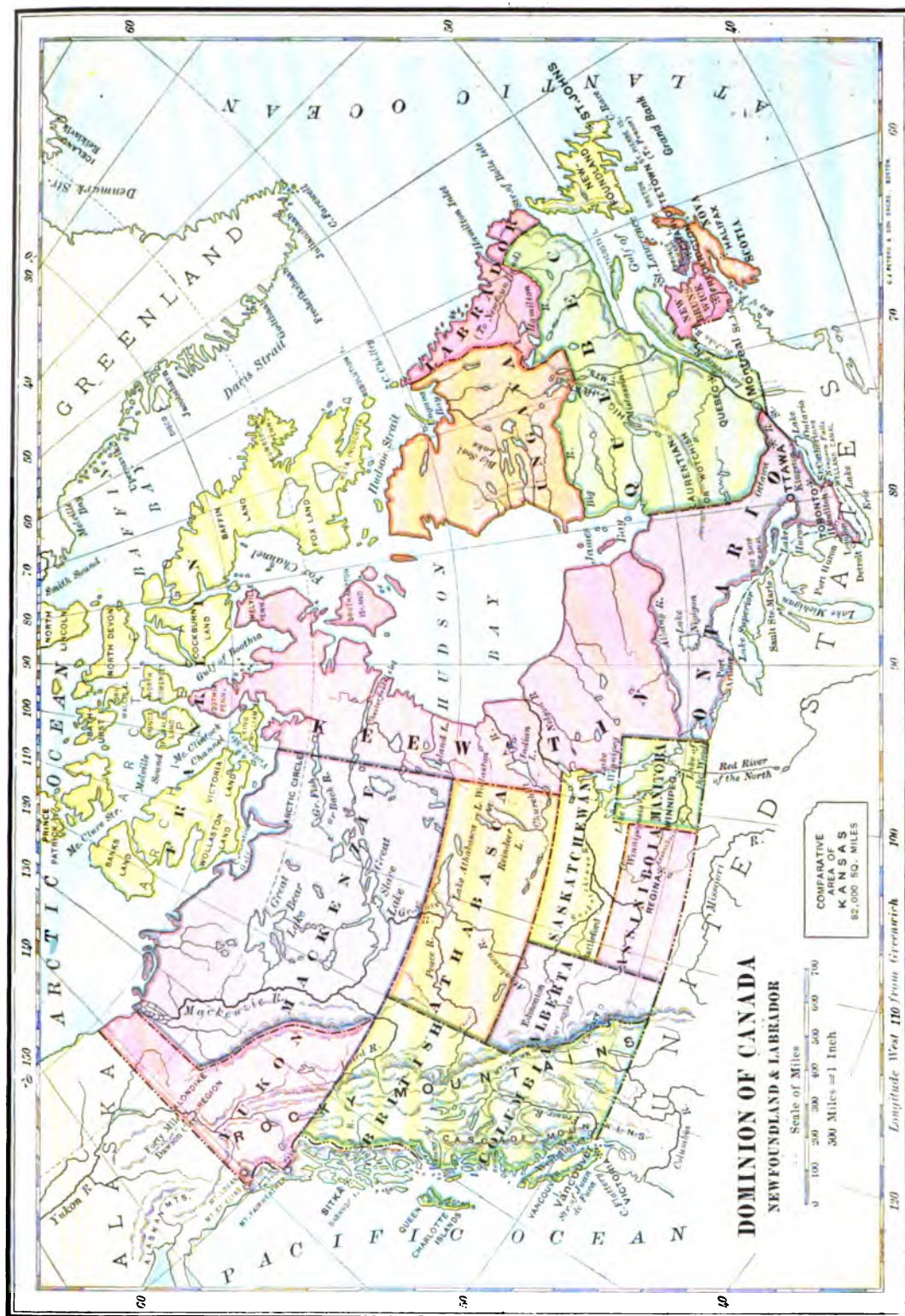


HOW RAPIDS ARE FORMED.

Above Montreal are the Lachine and other rapids, around which canals have been made for steamers in ascending the river. Many of the steamers descend through the rapids.

#### CLIMATE.

Between what parallels of latitude does Canada lie? Which part of Canada has a climate similar to that of the northern part of our country? Place a globe



[illegible][illegible]

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

I have been thinking of you a great deal lately, and wondering how you are getting on. I hope you are well and happy. I have been very busy lately, but I will try to write to you more often. I have been thinking of you a great deal lately, and wondering how you are getting on. I hope you are well and happy. I have been very busy lately, but I will try to write to you more often.

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The Commission has been informed that the following information was received from the Canadian Press:

to which country he was born and the United States to which country he came to live.

What about the  $\chi^2$  test? Is it for the same population as the  $t$ -test? How

does it vary in density? Can you give a reason for this? The population consists of whites, Indians, Eskimos, and half-breeds, who are a mixture of Indians and French-whites. What races are represented? A few thousand Eskimos live in the northern part in homes of snow and ice. How do they dress? What is their food? How do they procure it?

The Indians and half-breeds do most of the hunting and trapping and are scattered all over the country. In what kinds of homes do you think they live? The white people speak the French and English languages and are industrious, intelligent, and thrifty.

*Education* is free and unsectarian. It is of a high order in the densely settled portions, but it is hard to reach those living in sparsely settled districts. There are colleges, universities, and normal schools for the education of both sexes.

*Religion*.—In religion the utmost liberty prevails, and there is no state church. There are about three-fourths as many Catholics as Protestants.

*Government*.—Although Canada is a possession of Great Britain, the people are allowed the privilege of making their own laws. Their highest official is the Governor-General, and he is appointed by the King or Queen of Great Britain. Each province attends to its own local affairs.

## CITIES.

*Ottawa*, the capital of the Dominion of Canada, is situated on a river of the same name in the Province of Ontario. What officer resides here? The magnificent government buildings, called Parliament, occupy a prominent position.

Locate Montreal, Quebec, Toronto, Port Arthur, Winnipeg, Vancouver, Dawson City. Which are river-, lake-, or sea-ports? What city of the United States is directly south of Montreal? Of Quebec?

*Toronto* is the largest lake-port in the Dominion.

*Montreal*, the largest city of the Dominion, is the center of Canadian banking and of Canadian commerce. It is also a great railroad center, being connected with the Pacific coast and with the important railroads of the United States. It is noted for its many fine churches. It has many manufacturing industries. It exports considerable lumber and more grain than any other American port except New York. What city in the United States of about equal population?

Can you give any reason for *Dawson City*? What kind of a population would you find? How would you go there?

## COMMERCE.

The St. Lawrence and Great Lakes, with a number of short canals, form a fine system of steamship navigation. The Lachine Canal avoids the rapids in the St. Lawrence; the Welland Canal avoids the falls and rapids of Niagara, and the Sault St. Mary Canal avoids

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Farming and lumbering are the principal occupations, and wheat and lumber are largely exported. Name and locate the capital. Locate Kingston, Hamilton. What important port on Lake Superior?

QUEBEC.—How is Quebec, the “River Province,” situated? In what river basin does the greater part lie? What highland in the northern part? This province is noted for its beautiful scenery and cold climate.

The people are of French descent, speak the French language, and retain many of the customs and habits of their ancestors.

Name and locate the capital.

*Quebec* is one of the oldest and quaintest cities on the continent. It is very interesting on account of its historical associations. It is a walled city, like Mexico, and is sometimes called the “Gibraltar of America.” Find out why it is so called. The victory by the English which decided the result of the French and Indian war was won here. A monument marks the spot where the great generals fell. Find out what you can of this war and the generals.

The largest city of the Dominion is located in this province. Name it and account for its size. How would you go from this city to the city of Vancouver? To Chicago? To New York?

NOVA SCOTIA, meaning “New Scotland,” occupies what land-form? Point to it and tell its direction from us. By what waters is it nearly surrounded? Which body of water nearly separates it from New Brunswick? This bay is noted for its high tides, which rise sometimes from forty to fifty feet. Such a tide is called a “bore.” What island lies northeast? What island province north?

Agriculture and horticulture are among the chief industries, as nearly all food-plants and hardy fruits grow in abundance. Mining is extensively carried on, Nova Scotia being rich in minerals. From the products of the border waters and the extent of coast-line with good harbors, what other industries must engage the people? Considerable manufacturing is carried on.

Nova Scotia was formerly called Acadia, and was settled by the French. Longfellow’s “Evangeline” is a beautiful word-picture of this province, its people, and their sad history.

Name and locate its capital. It has one of the finest harbors in the world.

NEW BRUNSWICK is noted for its lumbering and fishing. What waters, provinces, and State border it? Its scenery is beautiful and varied. What is the capital? The largest city and seaport is *St. Johns*. Locate it.

NEWFOUNDLAND, and LABRADOR on the coast, form a separate English colony. What cape at the southern point? at the northern? By what is the island separated from Labrador?

The soil is sandy and barren, unfitted for cultivation.

Newfoundland and Nova Scotia are the remnants of the old

Appalachian Highlands, now turn nearly to base-level in the Piedmont Section. This entire section has been slightly drowned.

Newfoundland is thinly settled except on the coast. What must be the chief occupation of the people? Name and locate the capital. Dense fogs prevail off the coast, which endanger vessels *en route* to Europe and America. Icebergs form another danger in these waters. What current brings them into this locality?

The island of St. Pierre, south of Newfoundland, belongs to France, which country has extensive fishing interests in these waters.

MANITOBA is a rich agricultural province. To what section of the United States is it related? All the products of the Temperate Zone are raised here. The Manitoba red wheat is famous throughout the world, and brings the highest price in the London market.

The climate is cold but healthful. What is the capital?

BRITISH COLUMBIA is similar to the mountain mining section of the United States. It is rich in mineral products, of gold, silver, copper, and coal. The fisheries are important—cod, herring, and salmon being taken in large numbers. The capital is *Victoria*. Locate it. Locate Vancouver.

PRINCE EDWARD ISLAND constitutes the smallest and most densely peopled province of Canada. It is noted for its fine climate, fertile soil, and its fisheries. What is its capital?



BURROS PACKED FOR THE MOUNTAINS.



## DANISH AMERICA.

Danish America includes the islands of Greenland and Iceland. Greenland is the largest island in the world. It is capped with ice and snow all the year, and has little vegetation. It is the coldest inhabited part of the globe. It contains about ten thousand people, many of whom are Eskimos. What can be their occupation?



GREENLAND ESKIMO IN HIS KAYAK.

Iceland is a rugged mountainous tableland showing volcanic origin. Several active volcanoes still exist, the most important being Mt. Hecla. Geysers also abound. Where else are geysers found?

Iceland contains about seventy thousand people. The most important industry is stock-raising; sheep, cattle, and horses are the principal animals reared. Fisheries next claim attention.

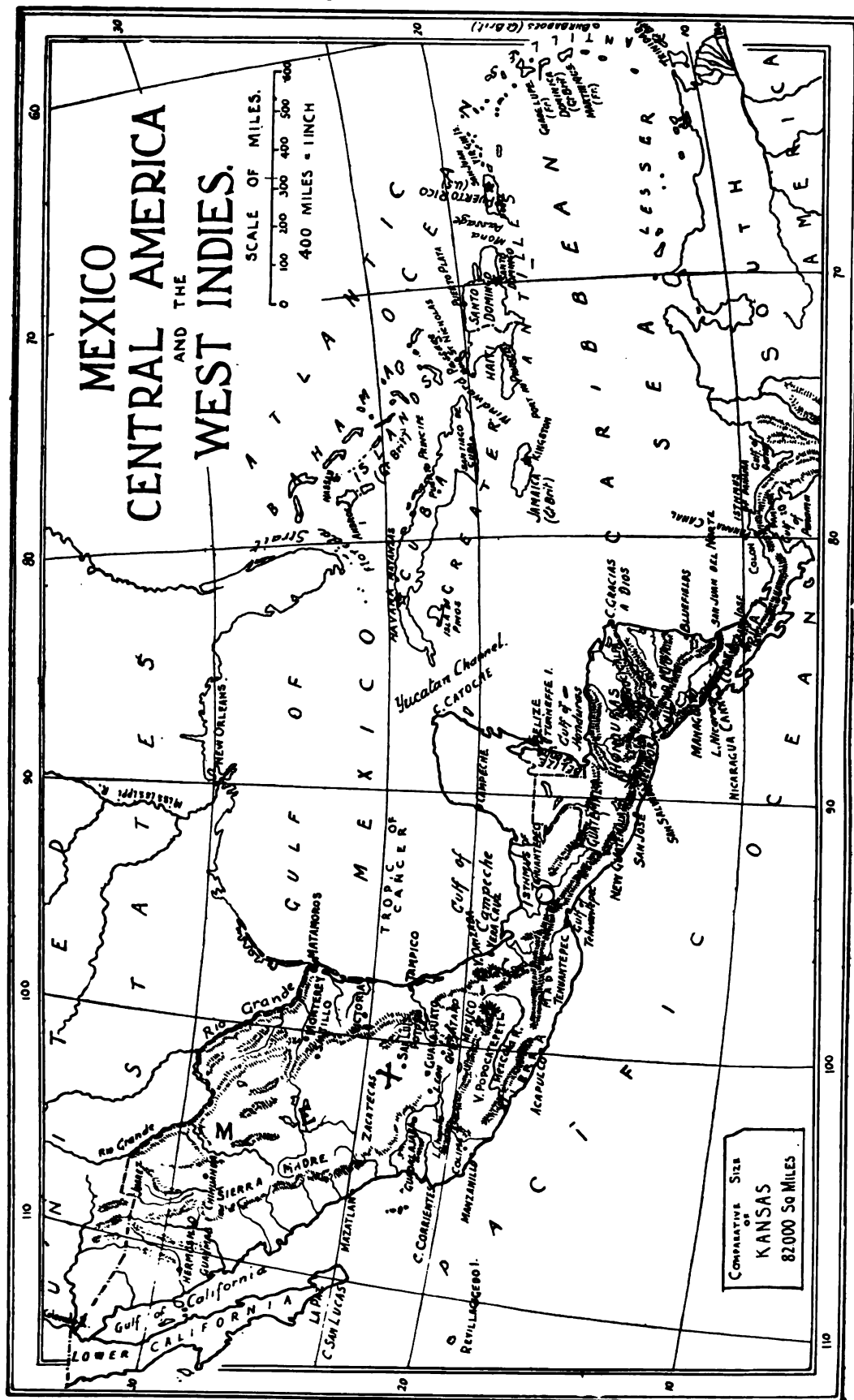
What is the capital? What State has about the same area as Iceland?

## MEXICO.

## LOCATION.

Between what waters does Mexico lie? Between what countries? What peninsula and gulf in the western part? In the eastern part? Name three capes on the coast. Locate the Gulf of Tehauntepec. What isthmus separates the Gulf of Campeche from the Gulf of Tehauntepec?

Mexico is about one-fifth the size of the United States and contains about one-fifth as many people. It has been likened to a cornucopia in shape.



## SURFACE.

What mountains along the western coast? What two volcanoes in the southeastern part? What lake in the western part? What river is its outlet? Where are the lowlands of Mexico? How extensive are they? How do its waters reach the sea!

The broad Mexican plateau is a continuation of the Rocky Mountain highland region. It is shaped like a wedge, wide at the north and narrow at the Isthmus of Tehuantepec. It reaches its greatest height near the City of Mexico, where it is 8000 feet above sea-level. This highland region is crossed by several ranges of mountains, the Sierra Madre (Mother Range) being the principal one. How do the ranges extend? A short range crosses the country from east to west in the southern part, which includes some of the highest peaks in North America; they are mostly active volcanoes. *Orizaba* and *Popocatepetl*, or "Popo," as it is called in Mexico, are the highest peaks, ascending more than three miles above the level of the sea. Great caps of snow envelop their summits, and the latter constantly send out steam and fumes of sulphur. Many Indians are engaged in removing the sulphur from the interior. *Jorullo* is a peak about 1500 feet high, remarkable for having been formed in a single night in 1759. How do the highest peaks in Mexico compare with those of our country?



MEANS OF TRANSPORTATION IN MEXICO.

The lowlands extend along the coast, and vary in width from fifty to one hundred miles. Where are they widest? Most of the rivers are short and navigable for a short distance only. Why? The rivers of the Pacific slope are mostly mountain torrents, flowing through deep cuts in the sides of the mountains. Can you name rivers in our country flowing through such deep valleys? In the plateau many beautiful lakes are found which reflect the high peaks, and many of the cities occupy old lake-bottoms.

## CLIMATE.

What fixed circle crosses the central part of Mexico? What kind of temperature would we expect from its location? What influences affect the climate of the interior? Why would you expect the northern tablelands to have little rain? Where would you expect much rain? Where unhealthy climate? Where a healthful climate? Where could we find freezing weather in Mexico?

Mexico has two seasons, the wet and the dry. The rainy season begins in May and continues until September.

## PRODUCTIONS AND OCCUPATIONS.

In no country do we find a more fertile soil or a greater variety of products. We find the rich tropical products in the lowlands and the lower plateau region.



WATER CARRIER, MEXICO.

Palms of every variety, rich cabinet woods, cotton, sugar, tropical fruits, and coffee grow in this region. On the high plateau, oak, pine, and spruce trees grow, and corn, peas, beans, rye, wheat, and barley are raised. Corn and peas form the chief food of the poor.

In the dry region of the north, the cactus grows to enormous heights and in the most fantastic shapes. At one time the cochineal that fed on this plant was an important article of commerce.

Different species of the cactus are cultivated for several uses. The juice from a certain species forms the principal drink of the people; fibers of the leaves are used in making bags, hammocks, ropes, etc.

Mexico is very rich in mineral products. Gold, silver, copper, tin, and quicksilver are

found; magnetic iron ore, marble of fine quality, sulphur, and salt. The Mexican onyx is particularly fine for ornamental purposes. About one-fifth of the population is engaged in mining, silver being the largest mineral product. The manufactured articles are mostly cotton and woolen goods, paper, leather, sugar, liquors, cigars, and fancy articles made by the Indians.

## PEOPLE.

We find a mixed people, composed of whites, Indians, and Mestizos, or mixed race. The latter form about one-half of the people; they speak the Spanish language. The prevailing *religion* is Roman Catholic, but all religions are tolerated. The *education* of the masses is neglected, but there are fine schools and colleges in the larger cities. The *government* is a republic. It is modeled after ours, and is called by the Mexicans the "United States of Mexico." It comprises twenty-seven states, two territories, and one federal district. The country is progressing rapidly. What hindered it in former times? Most of the people live in the highlands. Why?

*Mexico*, the capital and metropolis, is a beautiful city, situated on the tableland. Lines of railroad connect it with Vera Cruz, Acapulco, and cities in our country. It is finely laid out in squares, and contains some magnificent buildings. What city in our country is about the size of Mexico?

*Vera Cruz* presents a most beautiful appearance from the Gulf of Mexico; but it is the most unhealthy city in North America. Why? Nearly two-



MEXICAN OX CART.

thirds of the trade of Mexico is carried through this port. Most of the foreign trade is with the United States and Great Britain. Name the principal articles exported; imported.

Locate Acapulco, Guadalajara, Monterey, Leon, Guaymas, Tampico, Campeche. What cities about the size of each do you know in the United States? What two cities in Mexico near our own country?

## CENTRAL AMERICA.

In what part of North America is Central America? What waters nearly surround it? Between what two isthmuses does it lie? What gulf on the north? Name its political divisions. What is the capital of each? What mountains extend through the country, and in what direction? Describe the principal slopes. What large lake in the southern part? How is it drained? How long is this river? Compare this lake with Great Salt Lake and with Lake Ontario in size. Compare Central America with your own State in size. It is about three times the size of New England.

### SURFACE.

The surface resembles that of Mexico. A tableland occupies the greater part, bordered by a belt of lowland along the coast. This tableland is crossed by several irregular ranges of mountains, the principal being the Sierra Madre, which extends along the western part. This is the most volcanic region in the world. Most of the peaks near the Pacific are active. It is estimated that about eighty earthquakes occur here yearly.

The rivers of the Pacific slope are short mountain torrents; those of the Atlantic flow sluggishly. Give a reason in each case. The San Juan is the most important river in the country. This river and Lake Nicaragua form a part of the canal route that is expected to cross the isthmus. (See page 234.) What country is very much interested in this canal at the present time? Of what advantage will it be?

#### CLIMATE.

The climate is similar to that of Mexico, but it is warmer and more moist. What moisture-laden winds blow upon the eastern coast? The two seasons, rainy and dry, are not so marked as in Mexico. Where is the climate most healthful, and why? Where unhealthful, and why? Why are most of the cities on the highlands?

#### PRODUCTS AND OCCUPATIONS.

What kind of soil would you expect to find where there is so much heat and moisture? Coffee, sugar, cocoa, vanilla, India-rubber, and tropical fruits grow luxuriantly, and these are the principal exports. Dense forests cover the eastern coast and mountain sides. From these rich mahogany, rosewood, and dye-woods are cut and exported in large quantities. Honduras is especially noted for its mahogany. A single tree is sometimes worth \$5000. Gold, silver, and copper are found; but the mines are little worked, owing to the lack of coal and the poor roads.

#### PEOPLE.

The entire population of Central America is only about equal to that of the State of Ohio. About one-half are Indians; the whites number a few thousands; and the remainder are of a mixed race. About two-thirds of the people live in Guatemala and San Salvador, the most progressive states. They speak the Spanish language and are affable and courteous. They are, however, indolent and unprogressive. Frequent civil wars have retarded their progress.

### HAITI, OR SANTO DOMINGO.

This island is composed of two independent republics: Haiti, and Santo Domingo, or the Dominican Republic.

Between what two islands does it lie? What strait separates it from each? Which republic occupies the larger part of the island? Name and locate the capital of each. Which do you think has the better harbor, and why?

The mountains of Haiti rise to about the same height as those of Cuba, and the whole island abounds in beautiful scenery. The projections at the northwest and southwest are the continuation of the mountain ranges, and the indentation on the west extends in a broad, rich valley between them.

The climate and productions are similar to those of Cuba. Coffee is the leading product. Agriculture and herding are the principal occupations.

The people of the Republic of Haiti are nearly all negroes, only about one-tenth being mulattoes and whites. The whites are not allowed to hold real estate. Schools are very poor. The prevailing language is French. Most of the people are of the Roman Catholic religion. In the interior are some idol worshipers.

In the Dominican Republic there are very few pure negroes. The people are a mixture of white, Indian, and negro. Spanish is the prevailing language.

### JAMAICA.

In what direction is Jamaica from Cuba? What point on the North American continent is nearest? In what direction? What is the distance. What point on the coast of South America at about the same distance? How long is the island? How wide? Name and locate the capital.

The surface of Jamaica is mountainous, with heights nearly as great as those of Cuba and Haiti. The elevation renders the climate delightful and healthful. The rainfall is abundant all the year, the wet and dry seasons not being distinctly marked.

The mountains are valuable for pasturage and timber, and the valleys rich for agriculture. Sugar and coffee are the leading products and exports.

Jamaica was colonized by the Spaniards, but has been under the control of the English for nearly 250 years. English is the prevailing language, and most of the inhabitants are Protestants. The population is about 650,000, more than three-fourths of whom are negroes; only about 2 per cent. are whites; the remainder are mulattoes and coolies.

### THE BAHAMA ISLANDS.

In what direction from the United States are they? How far from the mainland? Through about how many miles do they extend? To what government do they belong?

The Bahamas comprise over 3000 islands and islets, 25 of which are inhabited. They are of coral formation, and are consequently but little elevated above the sea. The soil is thin. Why? The products are those of the adjacent coast.

These islands have been under the control of the English since 1629. The most important island is New Providence, on which Nassau, the capital, is situated. It is a city of about 12,000 inhabitants, and is noted as a winter resort.

The chief exports are sponges, conch-shells, and pineapples.



## THE BERMUDA ISLANDS.

Locate the Bermuda Islands. To what point of North America are they nearest? About how many miles are they from it? About how many miles from New York? What are their latitude and longitude? To what government do they belong? What advantage is there in their position?



A TYPICAL FIELD OF BERMUDA LILIES.

The Bermudas number about 400 islands and islets; but the entire area is only about 20 square miles. The largest island, Bermuda, is 15 miles long; on this island is the capital, *Hamilton*, a town of about 8000 people, half the population of the island.

The climate is delightful, and the islands are covered with green all the year. The chief exports are potatoes and onions.

How and in what direction would you go from Havana to St. Louis? Chicago? Ponce? From San Juan to Venice? Smyrna? Bluefields? La Guaira? From Santiago to Savannah? Montreal? Port Arthur, Canada? Victoria, British Columbia? From Nassau to London? St. Petersburg? From Hamilton, Bermuda, to New York? San Francisco? From Kingston to Sitka? Manila? Odessa? Bombay? Name articles of exchange.

## EUROPE.

Europe is a large peninsula of Asia, to which it physiographically belongs. We study it separately because its life, its influence upon the world, its commercial interests, and its political relations are entirely distinct from those of Asia. Europe is historically and politically the most important of the continents. Asia is called the continent of life origin ; Europe, the continent of life development.

### LOCATION AND OUTLINE.

Locate Europe. Point to it and tell its direction from us. In what direction is it from each of the other continents? In what direction would one travel from Europe to each of the other continents?

Between what parallels of latitude does Europe extend? Between what meridians of longitude?

What waters and land surround Europe? What bodies of water separate it from Asia? From Africa? Where does it approach nearest to Africa?

How does the area of Europe compare with that of the other continents? What is its greatest extent in miles from northeast to southwest? From Cape North, on an island north of Norway, to Cape Matapan? State any peculiarities in the form or coast line of Europe. Africa is much larger than Europe; its coast line is shorter. Why? What advantages has Europe in its coast line?

Describe the three largest seas of northern Europe. Of what sea is the Baltic an arm? How is it connected with the North Sea?

What three arms has the Baltic? What rivers belong to the basin of the White Sea? The Baltic Sea? The North Sea? What seaport on the White Sea?

The *White Sea* is open for only three or four months in a year, during which time vessels visit Archangel for supplies of timber, fish, and furs. Compare with the northern coast of North America.

The *Baltic Sea* is shallow and nearly tideless; its waters are brackish, instead of salt, because of the great amount of fresh water from its rivers. Upon the German and Danish coasts considerable amber is found.

*Amber* is the hardened gum of a pine which in former times grew in this part of Europe. From the insects found imbedded in it, people know that the climate was then much warmer than at the present time.

The *North Sea* is generally shallow, being deepest off the coast of Norway: there are many sandbars in the southern part. It was once a broad plain of the mainland stretching to the British Isles. The North Sea is noted for the different kinds and great number of fish; mackerel, turbot, and numerous other kinds are plentiful, but





the enormous quantities of cod and herring which exist are almost incredible.

What must be the occupation of the people living on its shores? What arm of the Atlantic lies between England and the mainland? How is it connected with the North Sea? Locate the Bay of Biscay. What rivers belong to these basins?

*Dover Strait* is bounded on either side by high cliffs of chalk. These cliffs connected England with the continent until comparatively recent times; but the constant washing of the waves finally severed it, forming the island.

The *Bay of Biscay* is open to the full sweep of the wild waves of the Atlantic during storms; and, being directly in the path of steamers plying between England and the Mediterranean, many wrecks have occurred in it.

Describe two large seas of southern Europe. How is the Mediterranean Sea connected with the Atlantic? What two seas are arms of the Mediterranean? How is the Adriatic connected with the Mediterranean? How does the *Ægean* differ from all other seas of Europe? Name the rivers of Europe belonging to the Mediterranean basin. How do they compare in size with other European rivers?

What two straits and sea connect the *Ægean* Sea with the Black Sea? What arm has the Black Sea?

Nearly one-fourth of the flowing water of Europe enters the Black Sea. Through what rivers? How does this affect the water? The Black Sea is deep and tideless. Why tideless?

What large inland sea (lake) on the boundary of Europe? What rivers belong to the basin of this sea?

The surface of the *Caspian Sea* is eighty feet below sea-level; its waters are very salt; its shore consists of many salt marshes; can you tell the reason for this?

The *Mediterranean* is of great extent and nearly tideless. Its waters are of a deep beautiful blue, very dense, and much more salt than the ocean. This is because of the rapid evaporation caused by the winds from the African desert. The Mediterranean abounds in many kinds of fish. Tunny, sardines, and anchovy are of commercial importance. Fine sponges are found off the coasts of Greece, Turkey, and the islands of the *Ægean*; valuable coral, off the coasts of the islands of Sardinia, Corsica, and Sicily. The Mediterranean Sea is of great historical importance because on its borders dwelt the civilization of ancient times, and upon its waters the commerce of the world was carried on.

All the seas of northern Europe are very shallow, and may be considered as submerged mainland. This is clearly shown on the coasts of Germany and Holland which lie below sea-level.

The southern seas, excepting Azof, are very deep, and were probably cut off from the ocean by the uplifting of the land.

Europe forms in itself two large peninsulas: the Scandinavian, and all that portion extending westward from the Baltic and Black seas. The latter has four smaller peninsulas projecting from it. Describe each. Which one projects northward? which projects from the southern coast? What peninsula extends into the Black Sea? How was each peninsula formed? Each peninsula of Europe is of great importance; can you tell why? What is the latitude of the North Cape? At what time of year would you visit this cape to see the "midnight sun"? The "midnight sun" can be seen anywhere north of the Arctic Circle in its season; why do people usually visit the North Cape?

What capes project from the Spanish peninsula? What two capes of North America are in about the same latitude?



THE ROCK OF GIBRALTAR.

The *Rock of Gibraltar* is a very important promontory projecting from the southern coast of Spain into the Strait of Gibraltar.

This cliff rises 1300 feet above the sea, and along its whole face stretch ranges of formidable batteries, tier upon tier, in recesses excavated out of solid rock. Every nook and corner bristles with heavy cannon, making it the strongest fortress in the world. It has been in possession of the English since 1704.

The islands of Europe, excepting Iceland, are continental and are subject to the same physical conditions as the mainland. They are governed by the European countries to which they belong. The British Isles, with other possessions, form an empire in themselves.

The northern islands are remnants or the highest parts of a vast plateau which has been submerged. This submarine plateau extends westward from Ireland for two hundred miles.

## SURFACE.

What part of the surface of Europe consists of highlands? In what general directions do the continental slopes extend? What causes them to extend in these two directions? Of what does the greater part of the long slope consist?

The *Great Plain* of Europe is a continuation of the plain of northern Asia which stretches westward from Bering Sea to the Bay of Biscay, unbroken except by the low Ural Mountains, which are little more than hills. (See map of Eurasia.)

The *Primary Highlands* of Europe extend westward from Asia Minor to the Spanish Plateau. They include the Pyrenees, the Alps, and the Balkans, the highest part being on the Alpine Plateau, from which they descend in all directions.



THE SELVIC PASS IN TYROL, AUSTRIA.

The *Alps* are a broken system of mountains of about the same average height as the Rockies and Sierras of North America, but



they seem more imposing because they begin their direct ascent much nearer sea-level and present a greater height to the beholder.

Locate Mt. Blanc, the highest peak.

North of the Alps is a piedmont section which descends in terraces to the German plain.

The *Secondary Highland* of Europe consists of the Carpathians and the mountains which continue northwestward between Germany and Austria.

Under what name are the Pyrenees continued westward? What river basin lies between the Pyrenees and the Alps? What range continues the Alps to the Balkans? By what partially submerged land are the highlands of Europe continued to the highlands of Asia? Across what sea and straits do they approach nearest?

What spur of the Alps forms the Italian Peninsula? What spur and mountains form the Balkan Plateau? What sea lies in the valley between the Apennines and Dinaric Alps? What river belongs to this sea basin?

What plain lies in the depression between the Primary and Secondary highlands? What river drains it? To what sea-basin does it belong? Among what mountains is its source?

Describe the river which rises in the Alps and finds its way to the North Sea. What lake does it form on the piedmont?

The *Plain of Hungary* was formerly a lake which has been filled by the young river in its course. There are still extensive swamps.

The *Rhine*, *Rhone*, *Danube*, and *Po* have their sources in glacial streams of the Alps; and they carry a great amount of glacial material. They all build deltas where they discharge their waters into the sea. The Rhine and Rhone spread out into lakes on the plateaus, from which they issue as clear streams; but they gather enough more material from their tributaries to build considerable deltas. What are the characteristics of a delta?

Between what two great depressions do the Caucasus Mountains extend? Name two peaks of the Caucasus. How does Elburz compare in height with other peaks of Europe? What part of Europe was under the ice sheet? (See Glacial map.) How do people know this? In what general direction do the highlands of the Scandinavian peninsula extend? Describe the slopes.

The surface of the *Scandinavian Peninsula* consists of a vast high plateau which descends abruptly to the coast on the west and more gradually in a series of plateaus on the east. It is dissected by many deep and narrow gorges. The western coast is jagged and precipitous and has a great number of *fjords*. There are many glaciers, the largest being in the southwest, the waters from which descend to the sea at the heads of the fjords.

A *Fjord* is a long deep bay inclosed on either side by high mountain walls. Such gorges were carved out by the great ice streams, as they approached the sea from a higher level. A slight drowning of the land after the ice retreated allowed the sea to set back into these basins for long distances.

There are many rugged, rocky islands and peninsulas on the western coast, a result of the partially drowned land. Compare with the New England coast.

The water-parting of Europe extends from the middle of the Ural Mountains to the middle of the Pyrenees. Trace it on the map. In what two general directions do the rivers flow? Name the rivers flowing down either slope.

Across the Great Plain of Russia to the mountains of central Europe, the water-parting is a slight swell of land rising only to about two thousand feet in the Valdai Hills. There are many glacial lakes in the northern part. The mountains of Europe are everywhere studded with beautiful lakes.

#### CLIMATE.

Considering latitude alone, what climate would you ascribe to Europe? How would the direction of the Primary Highlands and the long northern slope naturally affect the climate?

Europe has many modifications and has a warmer climate than any other continent in the same latitude. The greatly indented coast line and inland seas bring all parts of Europe near to the ocean. What is the effect of this?

The general trend and great extent of western seacoast open the continent to the full sweep of the westerly winds. What ocean current still further modifies these winds? The mountains are so situated in western Europe as to intercept these moisture-laden winds and cause them to precipitate their moisture. The snow-clad peaks of the Alps, Pyrenees, and Scandinavian mountains cause greater precipitation and furnish the right conditions for glaciers, which are the source of many streams and lakes.

The south and southwest winds which blow over the Mediterranean for a part of the year must first sweep across the hot land surface of northern Africa. How does this affect the winds?

The Great Plain is open to the full sweep of the northeast and east winds. The northeast winds of Asia precipitate their moisture on the high mountain wall, which deflects them to the west. They blow over the southeastern part of Europe as hot, dry east winds in summer, and cold, dry winds in winter. What effect has this on the Caspian Sea?

Where is the rainfall greatest; least? How do we know that Europe generally has a plenteous rainfall?

#### PLANT LIFE, PRODUCTIONS, AND OCCUPATIONS.

In what belt of vegetation is the extreme northern part of Europe? (See Vegetation chart.) Locate the forest belt. What countries are partially in this

belt? What trees grow in this section? What ones accompany the firs and pines? The pine and fir timber of the northern countries is very valuable because of the closeness of annual rings, caused by the short seasons of growth.

How do the highlands affect the forests? Locate other forest sections. What other forest products, besides timber, are there? What industries naturally grow out of forests?

Locate the grain sections. Which grains are most extensively raised. Least extensively raised? Rye, from which the black bread of the poorer classes is made, is the bread grain. It is extensively raised in nearly all parts of Europe.

Locate the temperate and tropical fruit regions. Which of the fruits also grow in North America? The semi-tropical fruit region is much further south in North America. Why is this?

What lands of Europe are generally favorable for pasturage? For meadows? How does the vegetation of northern Scandinavia compare with that of North America and Asia in the same latitude?

What part of Europe is almost exclusively engaged in the production of raw material? Which part is largely engaged in manufacturing and commerce? From the differences in density of population, which sections need to import food products?

Since animal life is largely influenced by people, in what sections are there more wild animals? (See Animal chart.) What ones live in the northern part of Europe? On the central plains? Among the mountains? For what are any of them valuable? What industries do they promote?

Besides the domestic animals common to North America, Europe has domesticated the reindeer, buffalo, and camel. The reindeer lives on moss, supplies food and clothing, and is the beast of burden for the Lapps. Camels are used for traveling over the steppes of southeastern Europe. Buffaloes are used for plowing and for drawing carts on the Plains of Hungary and the Balkan Plateau. Goats are extensively raised for milk and flesh in the mountainous countries of Europe. Cattle rearing, for milk and cheese, is an extensive industry on the Alpine Plateau and in the western lowlands. Sheep are extensively raised in western Europe and in Russia. Mules do the work of horses in the more mountainous districts because they are sure-footed.

What metals or precious stones are found in Europe? (See Mineral chart.) Locate some of the principal ones. Locate any building-stones, petroleum fields, rock-salt beds, coal and iron mines. Which part of Europe yields the greatest amount of coal and iron in close proximity? For what industry is this specially favorable? What other industries are promoted by large manufacturing and trade centers? How? Which section of Europe is especially noted for manufacturing and commerce? What means of transportation are favorable?

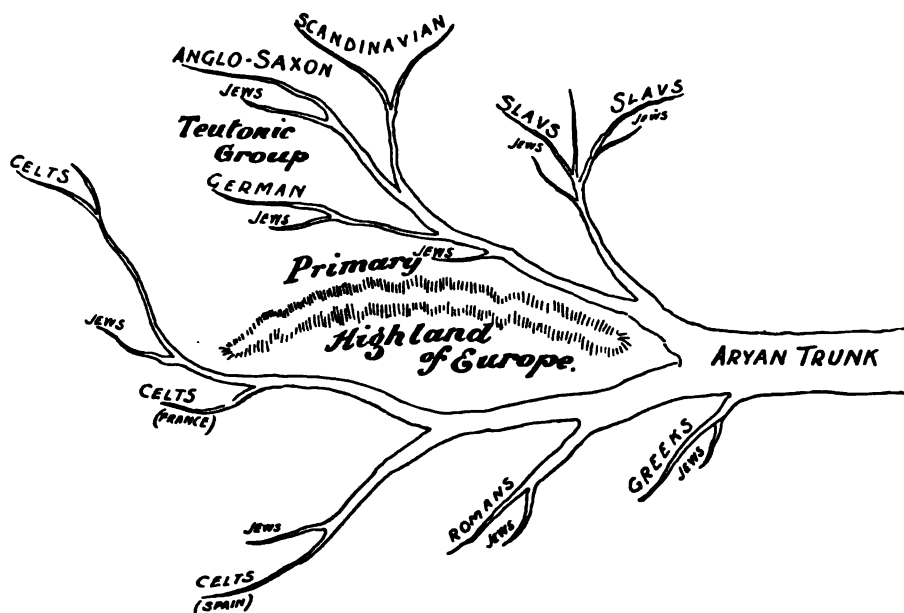
#### PEOPLE.

Why is the western part of Europe the more densely populated? Compare the density of population of Europe with that of North America; with Asia; with Africa. Can you give a reason for the differences? What is the average number to a square mile in Europe? In Africa?

The people of Europe belong mostly to the *Caucasic* group, the light type being represented in the northern and the dark type in the southern sections. What are the characteristics of each? (Page 53.)

The *Lapps* and *Finns* of northern Europe, the *Tartars*, *Magyars*, and *Turks* of southern Europe, belong to the Mongolic group, but they are a very small part of the entire population. What are the physical characteristics of this group?

Several branches of the Aryans migrated westward into Europe from Asia. The first branch, probably the *Celts*, moved westward

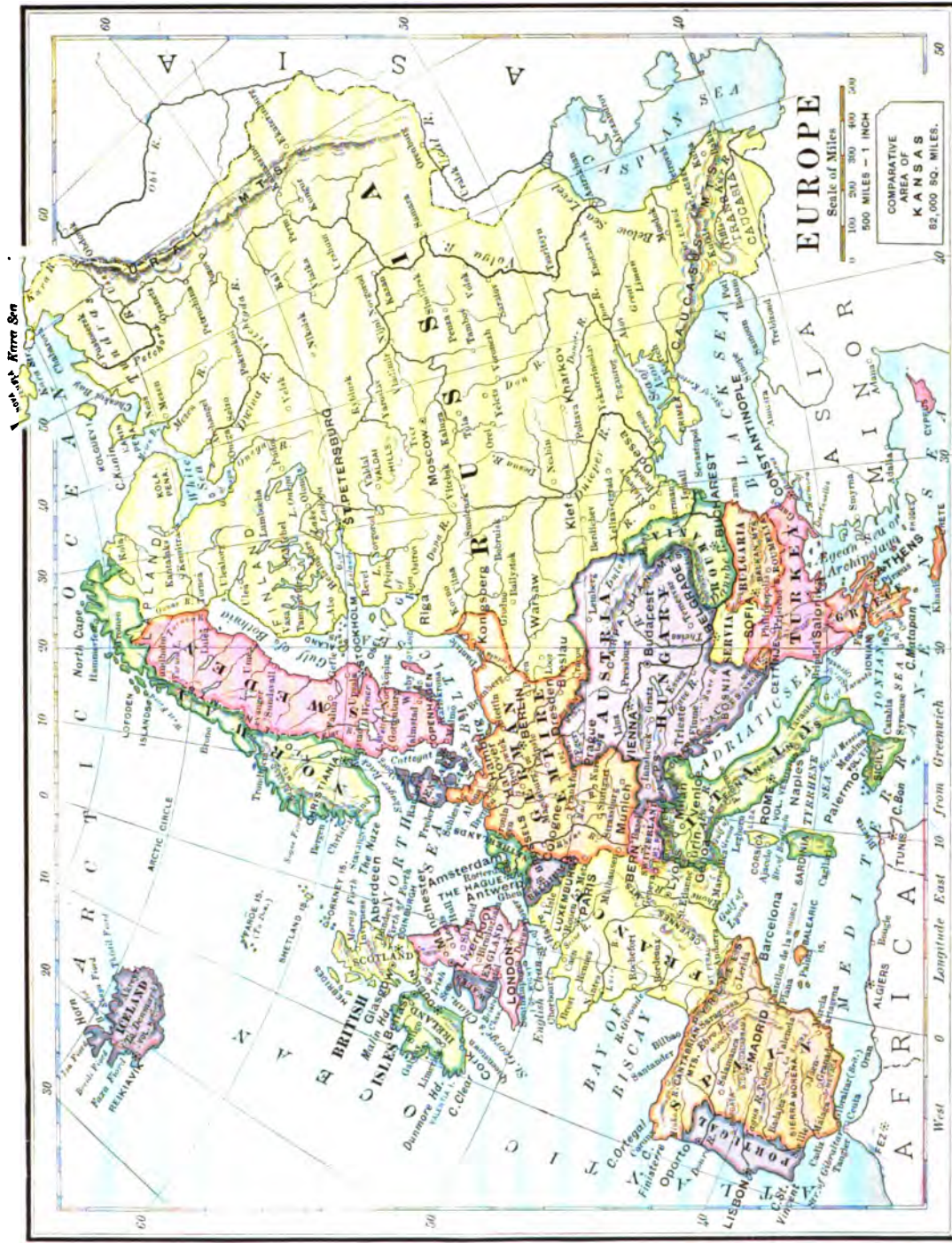


south of the Primary Highlands, some passing into Spain, others into France, and from thence into the British Isles. The pure Celtic language is spoken to-day by a few people in Ireland, western France, and in the highlands of Scotland and Wales.

The next Aryan branch developed into the *Greeks* and *Romans*, the most progressive of ancient peoples. The Romans spoke Latin. Italian is derived from the Latin. Spanish, Portuguese, and French are mixtures of Celtic and Latin.

The next Aryan branch was the *Teutonic*, which was closely followed by the *Slavs*. The Teutonic moved northwestward, north of the highlands, and developed into several nations—Germans, Dutch, Danes, Scandinavians, Angles, and Saxons. English is a mixture of the Teutonic, Latin, and Celtic. The English and their descendants are called Anglo-Saxons.

The Slavs spread over Russia, where the Slavonic languages are spoken at the present time. The *Semites*, or *Jews*, moved westward in large numbers, scattering over Europe, usually speaking the language of the people among whom they settled, yet preserving a distinct individuality under adverse conditions.



All of these branches moved, and are continuing to move, westward into America.

People living on or near the boundary between countries usually speak a mixed language; hence, as the countries are small, most of the languages of Europe are mixtures.

Which nationalities generally represent the lighter type? The darker type? Which type is more largely represented in South America? In Mexico and Central America? In Canada? What nationalities are represented in each type in the United States?

#### RELIGION.

Europe is Roman Catholic, there being nearly twice as many Roman Catholics as of Protestant and Greek churches combined, and there is about the same number of Jews as Mohammedans.

#### GOVERNMENT.

What governments are represented in Europe? Which are limited monarchies? Which are absolute monarchies? Which are republics?

There are three distinct classes in the European countries—the nobility, the middle class or tradesmen, and peasants.

#### COUNTRIES AND CITIES.

Name the countries of Europe; locate the capital of each. Tell the language and nation of each.

What two countries occupy the Scandinavian Peninsula; the Spanish or Iberian Peninsula? What country occupies the Danish Peninsula; the Italian Peninsula? What countries occupy the Balkan Peninsula? What countries lie wholly in lowland Europe? What one lies wholly in the highlands? What ones lie in both highland and lowland sections? What countries have no sea-coast? What countries border the Arctic Ocean? What ones border the Baltic Sea? The North Sea? The English Channel? The Bay of Biscay? The Adriatic Sea? The Ægean Sea? The Sea of Marmora? The Black Sea? The Mediterranean? What four divisions occupy the British Isles? Which is the largest? Which is the smallest?

Name one seaport on the northern coast of the Black Sea; one on the Bosphorus; one at the head of the Adriatic; one on the island of Sicily; two on the western coast of Italy; one on the southern coast of France; one on the coast of Portugal; one at the mouth of the Seine; one on the coast of the Netherlands; one on the western coast of England; one on the Elbe; and one on the southwestern coast of Norway.

How would a steamer go from Odessa to London? From Bergen to Venice? From Liverpool to Bombay? From Liverpool to Naples? From Constantinople to New York? To Singapore? From Hamburg to Genoa? To Rio Janeiro? To Valparaiso? From Odessa to the North Cape?



## THE BRITISH ISLANDS.

## LOCATION AND EXTENT.

The British Isles comprise more than five hundred islands, but only two are of any great size—Great Britain and Ireland. Great Britain is the largest island of Europe. It ranks seventh in size



STRATFORD-ON-AVON, THE HOME OF SHAKESPEARE.

among the islands of the globe, and is the most important of any in the world. From it have gone out people who have colonized large portions of the world.

About what is the extent of these islands from north to south? What island lies nearest North America? Point their direction from us. In what direction are they from Norway? Germany? France? Give their latitude. What part of North America is in the same latitude? Give the longitude. What part of the mainland of Europe is in the same longitude?

Bound by telling what waters lie around them. By what waters are they separated from the mainland? Where do they approach nearest the mainland? How are Great Britain and Ireland separated? What two groups of islands lie north of Great Britain? What group lies northwest? By what water are they separated from Great Britain? What group of islands is a continuation of Land's End? What island south of Great Britain? How were these islands formed? How does this drowning affect the coast line? How does it affect shipping and commerce?

Name six indentations on the coast of Great Britain. Five on the coast of Ireland. Which are at the mouths of rivers? How were these estuaries formed? On the western coast of Scotland they are fiords, but are called firths. Which are the most favorably situated as harbors? What two are connected by a canal? Which coast of Great Britain is more rugged? Which has more islands? Which coasts of Ireland are rocky and deeply indented?



Name and locate the projections on the coast of Great Britain. On the coast of Ireland. Why is it important for mariners to know of their location? Which do you think are most dangerous? Why? The dangerous points on Ireland alone are indicated by over fifty lighthouses and several floating lights.



GIANT'S CAUSEWAY.

Locate the Giant's Causeway; Fingal's Cave. Find out all you can about each.

Into what political divisions is Great Britain divided? Which is smallest? Which is most important? Which are most mountainous? Which has the longest rivers? Which has none of consequence? What natural land form does Wales occupy? By what waters is it nearly surrounded? Describe the mountains of Wales and locate one peak in them. What river of England has its source in these mountains? Describe it.

The British Empire comprises the United Kingdom of Great Britain and Ireland and vast colonial possessions.

The principal colonial possessions are Canada, Australia, India, New Zealand, British Guiana, and

vast possessions in Africa. Locate each. England also possesses islands in all parts of the world. What ones near North America? Name other important ones.

The British Empire has strong fortresses at Gibraltar, on Malta in the Mediterranean, and at Aden on the Gulf of Aden, thus commanding the shorter route to India.

By what other routes can you go from London to Bombay?

#### SURFACE.

What highland between Scotland and England? What three rivers rise in these hills? What chain forms the water-parting or "backbone" of the northern part of England? It varies in height from 1200 to 3000 feet. Trace its continuation in the southern water-parting.

Locate the Grampian Hills and name their highest peak. Upon this peak is an observatory of importance. These highlands lie in confused groups, are not of great height, and are interspersed with many mountain lakes. Locate Lake Lomond; Lake Ness.

Ireland is a part of the depressed continental plateau, and at one time was attached to Great Britain. The surface of Ireland is mostly an undulating plain with detached groups of hills lying near the coast. The central portion is very flat, has many lakes and numerous peat bogs, which cover one-ninth of the area and have an average depth of from sixteen to twenty-five feet. The peat is used

for fuel. Peat is the early stage of coal formation. The great quantity of tannin which these bogs contain prevents them from exhaling miasma injurious to health. Locate Lough Neigh, the largest lake in Ireland. Locate the Lakes of Killarney.

Excepting the southern part of England the surface of the British Isles has been more or less modified by glacial action. The peculiar humidity of the climate affects the surface by causing rapid disintegration. How may this affect the soils?

Describe the Clyde, Humber, Thames, Shannon, Barrow, and Erne rivers.

The Clyde is connected with the Firth of Forth by the *Firth of Forth* and *Clyde* Ship Canal. The Thames is the most important river, having upon it the largest seaport in the world. The Shannon



BEN LOMOND AND LOCH LOMOND, SCOTLAND.

is the longest river in the British Isles; it broadens out into several lakes in its course; is connected with Dublin by both the *Royal* and the *Grand* canals and with Belfast by the *Ulster* canal.

#### CLIMATE.

The climate of the British Isles is mild, equable, and healthful to a remarkable degree. It is favorable to active outdoor work and sports the entire year. This is due to their insular position, to the warm ocean current which flows along the western coast, and to the prevailing southwest winds. It is also due to the fact that these islands are the highlands of a vast submarine plateau which allows only the surface waters of the sea to wash their shores.

Scotland is colder than the other divisions. Mention two influences that make it so.

Ireland has greater equality of climate than Great Britain because it comes directly under the influence of the warm winds from the Gulf Stream and is little influenced by east winds. Its rainfall is evenly distributed and abundant, which favors vegetation and gives it the name of "Emerald Isle."

The southwest winds prevail in these islands except during April and May, when a colder and drier northeast wind prevails. The rainfall is moderately large in all localities.

#### OCCUPATIONS AND PRODUCTIONS.

From the charts pages 71 and 74 what food plants and what minerals are located in the British Isles? What industries have been promoted by these productions? What by the great extent of seacoast?

Manufacturing engages more than one-half of the people; mining, commerce, agriculture, and the fisheries engage the remainder. The uplands, hillsides, and some lowland sections are best adapted for grazing and farming. Careful attention is given to farming because of the demand for food supplies, but more and more England is depending on the importation of most food products. In hop culture England is second only to Germany in the world.

Three-fourths of the area of Ireland is adapted to agriculture, but none of it is brought to a high degree of production. The only important crops are potatoes, flax, and oats. Ireland has a considerable trade with Great Britain and exports cattle and cattle products, sheep, pigs, eggs, flax, and grain. From the flax, the famous Irish linens are manufactured.

According to its size England is the greatest manufacturing country in the world. In the manufacture of woollens and cotton cloths it leads all countries. From the mines have grown great iron industries, in which England ranks second only to the United States. In the interior of England, surrounded by rich farms, lie the great manufacturing districts, the cities of which are connected with the sea by about 2600 miles of canals and 15,000 miles of railroad.

The British Isles rank second to the United States in the value of her fisheries. The herring fisheries on the coast of Scotland are unrivaled. Cod and haddock are next in importance.

Between the Scottish Highlands and the Cheviot upland lies a rich farming, mining, and manufacturing district, which contains more than two-thirds the population of Scotland, though occupying only about one-fifth of the area. The Tweed valley is noted for the quality of its woollen manufactures.

#### PEOPLE.

What sections are densely populated? Sparsely populated? Can you give any reason for this? What Aryan branches are represented in the British Isles? What two languages? There are many English dialects representing different sections.

The British Isles have a population of more than three-fifths that of the United States. Compare the area of the two countries. Emigration is steadily decreasing the population of Ireland. The people consist of three classes—the nobility, the manufacturers and tradesmen, and the laborers.

What is the *government* of the British Isles?

The legislative branch, Parliament, is similar to our Congress. Where does it convene? It consists of the House of Lords and



THE HOUSES OF PARLIAMENT, LONDON.

House of Commons. The former is composed of nobles who gain their seats by inheritance, and the latter is composed of members elected by the people residing in the British Islands.

The King or Queen is the nominal head of the executive branch and holds the position through inheritance; but the executive power is really vested in the Prime Minister and his associates, who hold office at the pleasure of the House of Commons.

To what branches of Congress do these houses correspond? State the differences in methods of securing office. The constitution of the United States was based on the English form of government.

In *religion* the Episcopal or "Church of England" is the established church. All religions are allowed. The Presbyterian is the established church of Scotland. Most of the Irish are Roman Catholics.

#### CITIES.

Locate London, Oxford, Cambridge, Liverpool, Manchester.

*London*, the largest city and greatest seaport in the world, the capital of the United Kingdom of Great Britain and Ireland, lies on both banks of the

Thames, which is here crossed by many fine bridges. It leads the world in commerce, has the largest banking system, and for years has controlled the money market of the world. New York City, however, is fast becoming a competitor for this rank. The local industries of London are vast and varied; no other city does so great a publishing business; more malt liquors are brewed in London than in any other city in the world. What island of North America is in the same latitude as London?

*Oxford* and *Cambridge* contain the two oldest universities of England. They rank among the highest educational institutions of the world.

*Liverpool*, ranking second in population and commerce among the cities of England, and next to Glasgow in the British Isles, is the most important port on the western coast. It is the outlet for the great iron-, woolen-, and cotton-manufacturing districts. It imports food products and raw material. Its docks and wharves extend for six miles on the Mersey River, while on the opposite banks are the great docks of *Birkenhead*. The two cities are connected by a railroad which extends under the river. What city of the United States is about the same size as Liverpool?

*Manchester* is the leading city of the world in the manufacture of cotton goods. Other cities noted for their cotton industries are *Salford* and *Oldham*. Locate the cotton district. Manchester is connected with the sea by an important ship canal and the Mersey River.

Locate Birmingham, Leeds, Sheffield, Southampton, Cardiff, Swansea.

*Birmingham* is the leading city in Europe in the manufacture of brass, iron, and steel goods.

*Sheffield* is noted for its cutlery, armor plates for warships, and steel rails.

*Leeds*, a very old seat of trade, is important for its woolen manufacture and for its clothing and leather trade.



WELSH MOORLAND COTTAGE.

*Southampton*, on a deep estuary, is important as the terminus of the direct steamer route from New York.

*Cardiff* and *Swansea*, on the South Wales coal field, are noted for the manufacture of tin and zinc plate, which furnishes important exports to the United States.

Locate Glasgow, Edinburgh, Dundee, Aberdeen.

*Glasgow*, in the heart of the lowland coal and iron district, is the center of cotton manufacturing. It controls the iron trade of Scotland. It is the second city in Great Britain. The iron-ship yards in Glasgow and lower down on the Clyde are the greatest in the world.

*Greenock*, twenty miles below Glasgow on the Clyde, is noted for its iron-smelting, iron-ship building, and sugar-refining.

*Edinburgh* is noted for its institutions of learning and culture and for its great publishing business.

*Dundee* ranks first in Great Britain in the manufacture of linens. The leading industry, however, is the manufacture of jute, the raw jute being shipped direct from Calcutta, India.

Locate Dublin, Belfast, Queenstown, Cork.

*Dublin*, the capital of Ireland, produces porter and whisky in great quantities.

*Belfast* produces more linen than any other city in the world. It also has great shipyards.

*Queenstown*, the outer port for the city of *Cork*, is the place of call for many steamers.

What city about equal in size to each of the following: Liverpool, Manchester, Birmingham, Leeds, Glasgow, Edinburgh, Dublin?

#### COMMERCE.

Great Britain has the largest merchant fleet in the world, and carries not only her own merchandise, but that of several other countries, from which she realizes an enormous revenue. What are some of the articles of exchange among the colonies? Between Great Britain and the colonies?

### THE GERMAN EMPIRE.

#### LOCATION AND EXTENT.

In what part of Europe is the German Empire? What water and what countries bound it? About how long is its coast line? What peninsula extends toward the north? What island lies near the northern coast?

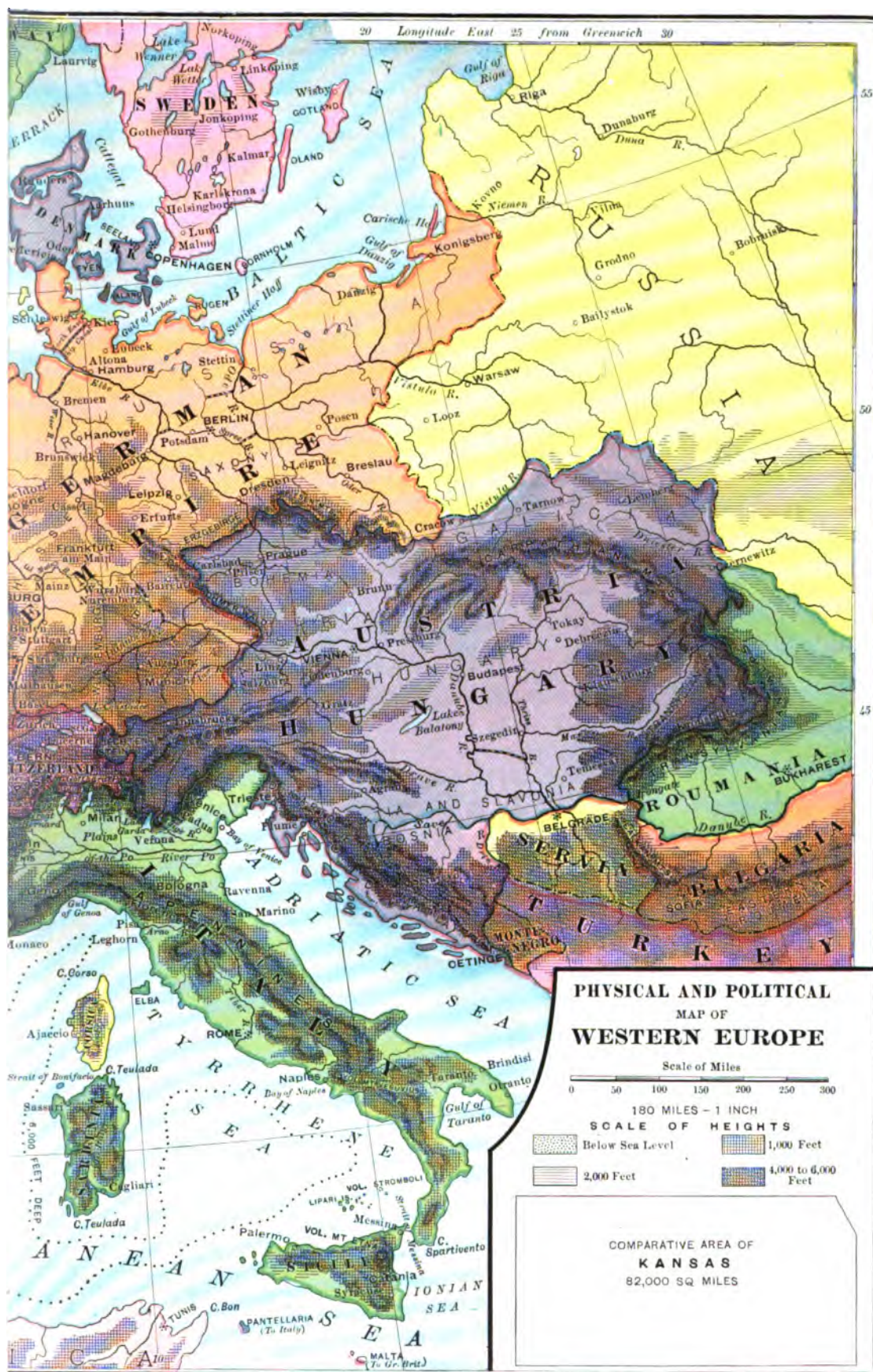
The German Empire comprises twenty-two states, the free towns of Hamburg, Bremen, and Lubeck, and the province of Alsace-Lorraine. Prussia is the largest state.

Germany holds possessions in Africa and among the Islands of Polynesia, and owns the Caroline Islands and the Ladrões, with the exception of Guam, in the Pacific. Locate these groups. What country owns Guam? How was it acquired? Why?









The *Grand Duchy of Luxemburg* lies between Germany and Belgium. By treaty the Great Powers declared it to be independent and neutral, but its interests are allied to those of Germany.

#### SURFACE.

Describe the surface of Germany. What mountain range on the boundary of France? What two ranges on the boundary of Austria? How is the drainage determined? To what sea basins do the rivers belong? What two Russian rivers cross the eastern part? What other large river flows into the Baltic Sea? What two rivers flow into the North Sea? What river crosses western Germany? How do its waters reach the sea? What important tributary has it in Germany? What river rising in the Alpine Plateau in Germany takes an eastward course? Describe it. The Danube takes its rise from the southern tributaries fed by the Alpine glaciers, and enters the sea through many mouths.

Swamps, marshes, and shallow lakes abound in the lowland of the northern part. There are also many beautiful lakes among the mountains. Locate one formed by the Rhine in its course.

#### CLIMATE.

Between what parallels of latitude is Germany? What part of the United States lies between the same parallels? What part of the British Isles in the same latitude as the northern part of Germany? Judging from the direction and extent of highlands and slopes, what winds prevail? How are the south winds intercepted? How do these highlands modify the climate of the northern part?

The western part is open to the westerly winds, but the climate becomes drier and colder toward the eastern part. What effect would a high mountain wall on the western coast have on the climate? A high mountain wall on the eastern border? What effect if the slope were southward instead of northward? The climate is warmer and more equable in the river valleys. Why?

#### PRODUCTS AND OCCUPATIONS.

Stretching westward from Russia, the greater part of Germany lies in the natural belt of grains and grasses interspersed with forests of deciduous trees. One-fourth of the area is covered with forests. The elevation and moist climate of the southern part produce natural forests of great value, and lumbering is an important occupation. The far-famed Black Forest lies in the southwestern part, from which a great amount of lumber is floated down the Rhine every year. Great attention is given to forestry, it being controlled by the government. As trees are cut, new ones are planted in their places.

Agriculture is the principal occupation, though the soil is nowhere very fertile, and the northern part is low and sandy. The cereals of northern latitudes are raised in all parts, rye being the most important. Potatoes are extensively raised in the eastern part. Tobacco, hemp, and flax are products of great value in the protected

river valleys. Grape culture is confined to the southwest, especially to the Rhine valley. In hop culture, carried on in the southern sections, Germany leads the world. Beets are largely cultivated for the manufacture of sugar, which is an important article of export.

There is abundant pasturage, and the common domestic animals are extensively raised.

Germany exports a few food products, but does not raise enough of many of them to meet the home demand.



HEIDELBERG CASTLE AND THE RHINE.

The cod, herring, and oyster fisheries of the North and Baltic seas, and the salmon and trout of the rivers and lakes, are important.

Germany is rich in all kinds of minerals and building stone, also in clays, from which porcelain and pottery are made and exported.

There is an abundance of coal, iron, and salt, and the yield of zinc, silver, and copper is greater than any other European country. There are many mineral springs, the most celebrated being those of Baden Baden. Locate.

Germany ranks among the leading countries of the world in the extent and variety of its manufactures and commerce. Among the most important manufactures are linen, woolen, cotton, and silk goods. In the production of steel and iron goods Germany ranks next to England.

In the production of the beet sugar, liquors, and chemicals Germany ranks first. Musical instruments, china, clocks, jewelry, dolls, and toys are manufactured and exported.

#### PEOPLE.

To what Aryan branch do the people belong?

The people of Germany have long been regarded as among the most thoughtful and intelligent. They have furnished many leaders in scientific and philosophical research. Education is compulsory, and

more general than in any other European country. There are good schools for the children of the common people and great universities famous for their learning and learned men.

*Religion.*—The prevailing religion is Lutheran, although there are many Roman Catholics, especially in the southern part.

*Government.*—To what class does the government belong? In whom is the executive power vested? The King of Prussia is Emperor of Germany.

The imperial parliament comprises two legislative bodies—the Bundesrath or Federal Council, the members being annually appointed by the different State governments; and the Reichstag, the members of which are elected by the people for a term of three years.

Germany stands at the head of the military powers of Europe. Every German capable of bearing arms has to serve a term in the army. Those of the seafaring population are liable for the same term in the navy.

#### CITIES.

Locate Berlin; three important cities on the Elbe, two on the Weser, one at the mouth of the Vistula, one on the Main; Kiel, Cologne, Strassburg, Stuttgart, Leipsig, Munich. Which are seaports?



BERLIN MUSEUM.

*Berlin*, the capital of the German Empire, ranks third in population among European cities. It is the intellectual center of Germany, and is called by the Germans the "City of Intelligence" because of its university, its numerous institutions of learning, its museums, theaters, laboratories, libraries, and many publishing establishments. It has great industrial and trade interests and is the center of banking and exchange in the German Empire.

*Hamburg*, the second city in size, is the principal seaport in Germany. During flood tide the largest ocean steamers can enter its harbor. It has



regular steamship communication with the United States, South America, and the West Indies.

*Bremen* is the second seaport ; but its harbor is too shallow for the largest steamships to enter.

Hamburg and Bremen are important ports of emigration.

Unlike the ports on the North Sea, the ports on the Baltic Sea are obstructed with ice during the winter.

What city of the United States about equal in population to Berlin ? To Hamburg or Breslau.

*Kiel* has the finest natural harbor on the German coast. It is the principal station of the German navy.

*Breslau* has been important for its fairs, where the merchants from the East and West meet to exchange products.

*Leipsig* is celebrated as a musical and literary center and for its book trade and publishing houses.

*Dresden* is noted for its porcelain and chinaware, and for its picture galleries, which are among the finest in the world.

#### COMMERCE.

With an area less than that of Texas, Germany has more railroads than any other country except the United States ; navigable rivers and important canals also form excellent means of transportation for both domestic and foreign goods.

Locate the Northeast Sea Ship Canal. Why is it important ?

The Rhine and the Elbe are the principal commercial rivers. The Rhine valley has been for centuries the principal roadway from central Europe to the North Sea. It flows through a rich country, presenting some of the most interesting natural and historical scenery in the world.

How is navigation made continuous from the North Sea to the Black Sea ? From the North Sea to the Mediterranean ?

### THE KINGDOM OF HOLLAND, OR THE NETHERLANDS.

#### LOCATION AND EXTENT.

By what countries and sea is Holland bordered ? What indentation on the coast ? What rivers have their mouths in Holland ?

Holland has been very successful in colonization, and has valuable possessions in the East Indies ; owns the western part of New Guinea in Africa, Dutch Guiana in South America, and several of the West Indies.

The East Indian possessions comprise Java, Madura, Sumatra, the Moluccas, Celebes, Timor, and parts of Borneo. Locate all.

## SURFACE.

The Netherlands lie in the section of Europe which is being slowly submerged. The surface is for the most part a delta, formed by the alluvial deposit of the great rivers which cross it. It is, therefore, low and flat and has no natural drainage.



A SCENE IN HOLLAND.

Much of the coastal plain lies below sea-level and is protected from the inroads of the sea by broad dykes. The meadows and pastures in the *polders*, as the low-lying districts are called, are from eight to twelve feet below sea-level. Large wind-mills are posted at various points to pump out the surplus water.

Holland has a most unique system of canals, which receive the surface water of the lowlands. They serve for drainage, irrigation, and navigation.

There is not enough slope to allow the rivers to discharge their sediment into the sea; so they form natural obstructions in sand-dunes.

#### CLIMATE.

The climate is similar to that of England, though the summers are hotter and the winters colder. What causes this? In winter the canals and rivers are frozen, and traffic on them is stopped.

What would you conclude concerning the healthfulness of the climate?

#### OCCUPATIONS AND PRODUCTS.

The soil is generally fertile, except in the southeastern part, which consists of marshes occupied by peat moors.

Agriculture, cattle-rearing, and dairy-farming have long been the chief occupations of the Dutch. Large crops of food plants, together



RAILROAD BRIDGE OVER THE MEUSE RIVER, ROTTERDAM.

with sugar-beets, flax, chicory, and tobacco are raised; and butter, cheese, and cattle are largely exported. The growing of hyacinths and tulips and the raising of seeds and bulbs are distinct industries on the northwestern coast.

The herring and oyster fisheries are important.

Minerals are scarce, but there is an abundance of valuable clay for the manufacture of tiles, bricks, and pottery. The making of the famous Delft-ware has been revived.

The manufactures are valuable and varied, although nearly all of the coal and raw material are imported. The most important manufactures are linen and cotton goods, starch, and beet-sugar.

#### PEOPLE.

The Dutch are a cleanly, thrifty, and industrious people. Many can neither read nor write, as *education* is not compulsory, though provided by the state if demanded.



A large majority are Protestants; the remainder are Roman Catholics and Jews.

What is the kind of *government*? Who is the present ruler? What can you tell of her?

#### CITIES.

Locate The Hague, Amsterdam, Rotterdam.

*Amsterdam*, the commercial capital, is built on piles; it is intersected by many canals, which are crossed by numerous bridges. It has large ship-building yards. It is noted for the cutting and polishing of diamonds.

*Rotterdam*, the second city in Holland, has an extensive trade with the Dutch East Indies. It is the most important seaport of the mainland of Europe. Can you tell why?

What cities in the United States about equal in size to each of these cities?

#### COMMERCE.

The country is covered by a network of railroads, which are rapidly taking the place of the canals as a means of transportation for the large domestic commerce. In foreign commerce Holland ranks among the leading European countries. Besides the home products and manufactures, spices, coffee, tropical fruits, cocoa, and other products are exported from the foreign possessions. Trade is largely with Great Britain and Germany. The carrying trade is still large, though less than formerly.

### DENMARK.

#### LOCATION AND SURFACE.

Of what natural land-forms does this kingdom consist? What waters and land bound it? To what country is the peninsula attached?

Name the largest island of this kingdom. For what is it important? What European country about the size of Denmark? To what surface division of Europe does Denmark belong?

Greenland, Iceland, the Faroe Islands north of Great Britain, and several islands of the West Indies are Danish possessions. Locate the three first named.

#### SURFACE.

The surface is mostly flat with low-lying hills in the southeast. The western half consists of broad stretches of moorland and a coast skirted with sand-dunes and lagoons, with no harbor deep enough for large vessels. The eastern half consists of fertile lands, fine beech forests, with numerous good harbors on the coast. Over seventy lighthouses and several lightships protect vessels from the Denmark coasts.

#### CLIMATE.

Denmark is colder than the parts of the British Isles in the same latitude. Why? What is the difference between the Baltic and North Seas in winter. Why? Denmark has frequent mists and

fogs, and abundant rainfall. It is subject to great extremes of heat and cold, which are scarcely broken by spring and autumn.

#### OCCUPATIONS AND PRODUCTIONS.

The soils are light. Agriculture engages more than one-half of the people. One-fourth are engaged in manufacturing, and the remainder in commerce and fisheries.



BOURSE, COPENHAGEN.

Grain, potatoes, flax, and beets are raised; but the imports of breadstuffs exceed the exports. The islands contain noble forests and excellent corn lands.

The rearing of horses, swine, sheep, poultry, and of cattle for dairy products are principal industries.

Machinery, porcelain, bricks, and gloves are leading manufactures. There are also iron-works, tobacco factories, and factories for making linens, woolens, and wooden shoes.

#### PEOPLE.

The Danes are closely allied to the Scandinavians in race and language. What European countries have a smaller population? Which of the United States have about the same population? The principal religious sect is Lutheran.

Elementary *education* is compulsory and widely diffused.

#### CITIES.

Name and locate the capital; Odense, Aarhus.

*Copenhagen*, a trade center, is noted for its university, public libraries, and the Royal Library, which is especially rich in Icelandic literature.

What is the form of *government*?

#### COMMERCE.

The foreign trade is with neighboring countries. Name them. The exports are the products of domestic animals,—especially butter,—manufactured articles, and fish. Name some imports.

Railroads connect the industrial trade centers. Two-thirds of the export trade is in native vessels, as the Danes are a seafaring nation. Why do they follow the sea?

## SCANDINAVIA.

### LOCATION AND SURFACE.

What two kingdoms comprise Scandinavia? Bound each. Which is larger? Which extends farther north? Describe the surface of Scandinavia. Which of its countries occupies the plateau? Where does the plateau reach its highest elevation? Which country has the more rivers and lakes? To what



A FIORD IN NORWAY.

sea-basin do they belong? What conditions of surface and soil exist as the effect of the ice-sheet (page 65)?

Locate two mountain ranges. Two lakes. Compare the eastern and the western coasts. Give the reason for the deep fiords and islands on the western coast. Where are there similar conditions? What group of islands on the northwest?

Most of the rivers which flow eastward widen out into shallow lakes or are obstructed by rapids. How does this affect navigation? Many of the mountain torrents on the west coast fall to the sea in magnificent waterfalls.

### CLIMATE.

On the slope of Sweden the winters are colder and the summers hotter than in Norway, because it is open to the sweep of the north-east winds, while the high western mountains shut off the moderating west winds.

The midsummer day of nearly twenty-four hours of sunshine tends to increase the heat; and the midwinter night, when the sun does not shine for nearly twenty-four hours, increases the cold.

The northern coast is washed by the Gulf Stream, which prevents the freezing of the sea, while Skager Rack and the Baltic Sea are closed to navigation for several months in the year.

#### OCCUPATIONS AND PRODUCTIONS.

There are abundant forests in both Sweden and Norway, but the former has the larger percentage. Why is this? The two countries furnish nearly one-half the timber exported from Europe.

Compare the vegetation with that of North America and Asia.

Lumbering is a leading industry. Ship-building, the making of wood-pulp for paper, and the manufacture of lucifer matches are



THE MIDNIGHT SUN, NORWAY.

important industries depending upon the forests. Three-fourths of the people are engaged in agriculture and the rearing of live stock.

Neither country raises enough food-products to meet the home demand; but Sweden exports some grain, and quantities of butter from the dairies, which offset the imports. Which country is better adapted for farming? Which for the rearing of live-stock? Why? What food plants are cultivated? Oats and barley predominate.

The Norwegian fisheries are the most valuable in the world, next to those of the United States and Canada. They engage the people of the entire coast. *Bergen* is the center of the herring fisheries. Locate, and tell in what latitude it is. The most important cod fisheries are those of the Lofoden Isles. Whale fishing is important in Norway, the illuminating oil being a needful product because of the long nights. Sweden uses a mineral oil.

Sweden exports large quantities of iron ore, for which it is famous. What other minerals do you find in this peninsula?

Manufactures are steadily increasing. The most important are hardware, matches, fish oil, cotton and woolen goods.

## PEOPLE.

Which country has the larger population? Why? What is the average number to a square mile in the entire peninsula? How does this compare in density with other countries of Europe? With the United States?

The people belong to the Teutonic branch. The *religion* is Lutheran. *Education* is compulsory and free. There is an excellent system of elementary schools, besides several higher institutions of learning, technical, dairy, and farm schools. Many of the people emigrate to the United States and settle in agricultural districts. Why?

In *government*, the two kingdoms are under one king; but they have different constitutions, parliaments, and laws. Who is the present ruler?

## CITIES.

Name and locate the capital of each kingdom. Locate Gottenburg.

*Stockholm*, beautifully situated on a small lake studded with verdant islands, is the seat of the iron manufactures, and the largest city on the peninsula. What city in the United States of about equal size?

*Gottenburg*, the second city in Sweden, has an extensive trade in timber, cattle, and iron.

*Christiania* and *Gottenburg* have large lumber mills and cotton factories.

*Hammerfest*, a small fishing village, is the most northern settlement in Europe. The sun is not seen for two months in winter, yet fishing is carried on and the port is open throughout the year.

## COMMERCE.

Lakes Wetter and Wenner, together with a ship canal, connect the east and west coasts of Sweden. These, with several railways, serve as a means of transportation in the interior and as an outlet to the coast.

Trade is mostly with Great Britain and Germany. Norway and Sweden have a large merchant fleet, principally engaged in carrying goods for other countries.

## RUSSIA.

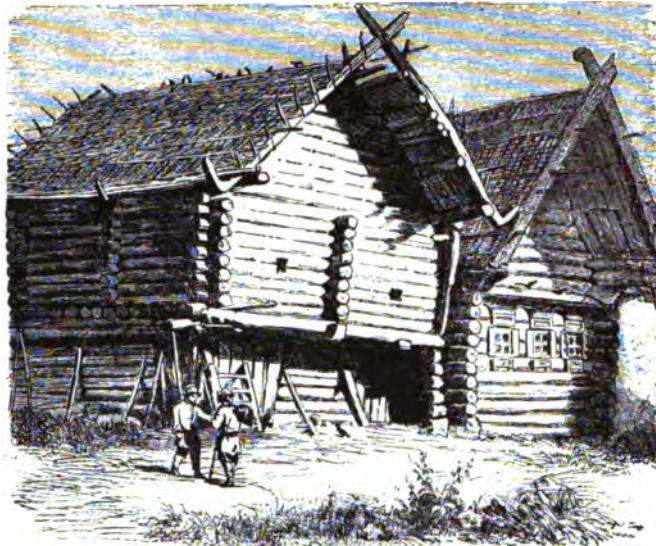
## LOCATION AND EXTENT.

The Russian Empire includes European Russia, which contains three-fourths of the surface of Europe, and the Asiatic divisions of Siberia, Turkestan, Khiva, and Bokhara. It stretches from the Baltic to the Bering Sea and embraces one-sixth of the land surface of the world.

Give the boundaries of European Russia. What three gulfs are arms of the Baltic Sea? What sea is an arm of the Arctic Ocean? Of the Black Sea?

What island northeast of Russia? What sea between this island and the mainland? What island northwest of Russia in latitude  $80^{\circ}$  N.? What large peninsula extends from the northwestern boundary? What one on the southern border?

What mountains and river form a partial boundary on the east? What mountains in the southeastern part? What is Russia's greatest extent in miles from north to south? From east to west?



HOUSE IN NORTHERN RUSSIA.

#### SURFACE.

Russia occupies the greater part of what surface division? What section is covered with glacial drift and lakes? What would you find as evidence of the ice-sheet if you should visit this section?

The surface consists of a vast rolling plain rising into a broad, flat, and marshy central plateau, which reaches its highest elevation in the Valdai Hills. In the extreme northern part are extensive frozen marshes called *Tundras*. The land of this section is frozen to a great depth. During the short summer only the surface soil thaws. The water cannot sink into the ground, and it is too low for good drainage.

In the southeastern part are the *Steppes*, which are similar to our prairies. The low steppes are salt marshes, which lie below sea-level and slope to the shore of the Caspian Sea.

Nearly all of the large Russian rivers have their sources near each other on the same level of the marshy plateau. Boats can go up one river and be carried across the flat water-parting and floated down another river to the sea.

Trace the principal water-parting. In what two general directions do the rivers flow? To what oceanic basin do they belong?

Describe the Volga and its principal tributary. Why does it make so many windings in its course? Compare with the Mississippi.

Name three rivers of Russia which belong to the basin of the Black Sea. Which one flows into the Sea of Azof? What two rivers have their mouths in a foreign country? What river flows into the Gulf of Riga? The White Sea? The Arctic Ocean? Through what seas and straits do the waters of most of these rivers finally reach the ocean? What ones do not reach the ocean?

Name and locate three lakes of Russia. What division of Russia is studded with lakes? There are many salt lakes in the southeastern part.

The Volga is the longest river in Europe and drains the largest basin. It is the channel for collecting and distributing the Russian products, and is the principal outlet for the Russian interior. It is navigable throughout its entire length, and discharges its water into the Caspian Sea through many mouths.

#### CLIMATE.

In what belts of climate is Russia? What parts of the United States and Canada lie between the same parallels of latitude? What are the prevailing winds? In what sections are they modified by the seas? Why is the region around the Caspian an exception?

The climate for the greater part is continental, untempered by sea breezes. Russia has very long, cold winters, short, warm springs, hot summers, cold autumns, and little rainfall. The rivers are frozen over in December and remain so from three to six months.

The dry east winds which prevail in the southeastern part cause a greater evaporation of the waters of the Caspian Sea than its tributaries can supply. How has this affected the sea?

#### PRODUCTS AND OCCUPATIONS.

Locate the region of mosses and lichens, of dwarf trees, of forest trees, grass-lands, grains and hardy fruits. What food plants are produced? In what sections are flax, tobacco, cotton, and the vine cultivated (see page 45)?

The forests extend from the tundras to the steppes, and are divided into two sections: the region of coniferous forests, which cover the northern part, and the region of deciduous forests, interspersed among the grain and grass-lands, which cover the southern half of Russia.

Agriculture is the principal occupation.

Two-fifths of the land belongs to the government, one-third to the peasants' communes, the remainder to private proprietors, to the nobility, and the merchants. The greater number of peasants live in communistic villages in the midst of land sections which are owned or rented by the entire commune. A certain amount of land is set apart for pasturage; the rest is apportioned according to the number in each family.



In the production of wheat Russia ranks second only to the United States. The larger part is exported. Upon what grain do the peasants depend for bread?

The common domestic animals are extensively raised, and meat is an important export. Besides the horse, what other beasts of burden are used? Where is each used? Why?

Hunting is an important industry. In what section? For what purpose?

The fisheries of the northern part, and those of sturgeon at the mouths of the Volga and Ural rivers, are of great importance.

What minerals are found? Gold is important. Russia leads the world in the production of platinum. The petroleum fields on the western coast of the Caspian Sea, with those of the United States, supply most of the world with kerosene. Locate the principal salt region.

The use of machinery is developing manufacturing centers in a few cities; but most articles are home-made. Russian leather and sugar are important manufactures.

#### PEOPLE.

What Aryan branch of people is largely represented in Russia? To what race do they belong? To what race do the Tartars, Finns, and Lapps belong? Many Jews are scattered throughout the western provinces.



GENERAL VIEW OF MOSCOW, WITH KREMLIN.

Slavonic is the principal language, but there are many mixtures and dialects spoken.

There are some universities and special schools of high grade, but the general status of *education* among the people is low.

The prevailing *religion* is that of the Orthodox Greek Church.

What is the kind of *government*? The executive power is vested in the Czar.

#### CITIES.

Name and locate the capital; locate Moscow, Warsaw, Odessa, Kief, Kharkof, Riga, Baku. What two cities on the Caspian Sea?

*St. Petersburg*, the chief seat of commerce in Russia, is connected by canals with the navigable rivers and by railroads with all the principal cities. A large ship canal connects it with the sea.

The city was founded by Peter the Great in 1703. He located it in the midst of unhealthful marshes and a cold, dreary climate, that the seat of government might be near the sea. It is strongly protected by the fortress of Kronstadt, which is built on a small island at the mouth of the Neva, eighteen miles below St. Petersburg.

In what latitude is St. Petersburg? What other European city is in the same latitude? What mountains and what cape of North America are in about the same latitude?

*Odessa* is the chief port for exporting wheat and cattle products; it is connected by railroads with the interior.

*Moscow*, the ancient capital, is the great industrial, commercial, and railway center of the empire.

*Astrakhan* exports the products of the sturgeon fisheries, which are the finest in the world.

*Baku* is the market for the richest petroleum fields in the world.

What city in the United States is about equal in population to St. Petersburg?

#### COMMERCE.

Besides wheat, meat, and leather, the exports are hides, tallow, bristles for brushes, horsehair for hair-cloth, flax, and hemp.

The principal imports are machinery, iron and steel goods, tea, coffee, wines, and raw-cotton.

Commerce is carried on by means of over 30,000 miles of river navigation, 500 miles of canals, and over 25,000 miles of railway. A trans-Siberian railway is in process of construction, connecting European Russia with the Pacific coast. Name its eastern terminus.

Great fairs are held in convenient trade centers for the exchange of produce and wares. The largest is held at Nijni-Novgorod, where people gather three times each year from different parts of Russia and Asia.

#### • TRANSCAUCASIA.

Locate Transcaucasia. What countries are on the southern border? What mountain peak on this boundary? What mountains on the north? What waters on its eastern and western borders? What river drains a part of this section? Describe it.

Transcaucasia is a region rich in forests, vineyards, grain-fields, and pastures. Wool of a fine quality is exported. This section has great mineral wealth, the most important being the petroleum wells in both the eastern and western parts, the richest being those of Baku on the Caspian. Much of it is shipped from the refineries in Baku to Batum on the Black Sea, by rail, from which place it is exported by tank-steamers to nearly all sections of the world. On the Armenian tableland, upon which Mt. Ararat is located, there are enormous quantities of rock-salt.

*Tiflis*, on the Kur, is the chief town.

## FRANCE.

## LOCATION AND OUTLINE.

What waters and what countries bound France? What separates it from England? What two peninsulas project northwestward? What islands belonging to Great Britain lie west of Normandy? What indentation on the southern coast? What large island belonging to France on the southeast? This island is noted for being the birthplace of Napoleon. About how many miles of coast has France? Which of the United States is about the size of France?

Guiana, Gaudeloupe, Martinique, and St. Pierre in America; Algeria, Senegambia, and Guinea in Africa; Cochin-China and French Tonkin in Asia, and a number of groups of islands in Oceania make up the bulk of the possessions of France. Locate as far as possible.

Which do you think are most important? Why? What are some of the products France derives from them?

## SURFACE.

What mountains on the border of Spain? Of Germany? Of Switzerland? Of Italy? What peak near the border of Italy? Locate the central plateau and the lowlands. What mountains on the southeastern border of the plateau? In what direction is the general slope? Trace the central European divide



A FRENCH VILLAGE.—HOUSE OF MILLET.

across France. What three rivers does it send northwestward across the plateau and lowlands to the sea? What river and tributary between the Alpine and the Central plateaus? This river is navigable to Lake Geneva. Of what commercial advantage is the position of this river? What river finds its way to the sea across Belgium and Holland? Trace the divide between the Seine and the Loire rivers. What natural land-forms are shaped by the extension of this divide toward the sea? What river basin between the Pyrenees and the central plateau? What river unites with the Garonne to form the Gironde estuary?

North of the Pyrenees is a vast fan-shaped alluvial deposit made by the mountain torrents on the plain at the foot of the mountains. Can you explain it? Between this and the Garonne is a sandy, marshy plain, called the Landes, bordered on the bay by sand-dunes.



LANDAIS PEASANTS.

*From Painting by Rosa Bonheur.*

The widest and most desolate part of the central plateau is occupied by the Auvergne Mountains, which consist of a line of extinct volcanoes, called *Puy's*.

#### CLIMATE.

Between what parallels of latitude does France lie? What are the prevailing winds? How is France more exposed than England to the chilling northeast winds in winter? Where are the sections of greatest rainfall? What effect have the highlands upon the climate in the south of France? How does the direction of the Rhone valley affect its climate?

#### OCCUPATIONS AND PRODUCTIONS.

The soil is generally fertile, and about three-fourths of the area is under cultivation. Forests cover the mountain sides, but the timber is of little account except for fuel. The cork-oak thrives at the foot of the Pyrenees. Find out what you can about the cork industry. Coarse grass and southern pines grow on the Landes; pine products are important. Compare with the Atlantic coastal plain.

The productions are grains, of which wheat is the principal, potatoes, beets, flax, hemp, tobacco, fruits, and green crops. Great results are being achieved in nursery gardening. There are many vineyards, from which wine is produced, in the southern and western sections. Silk culture is important. Our common domestic animals and mules are extensively reared, and form important exports, mostly to England.

The coast fisheries are second only to Norway; the deep-sea fisheries of France near Newfoundland are of great value.

France is poor in minerals, but rich in building stone, chalk, and plaster. Quarrying is the business of over 100,000 men.

France leads in the manufacture of finer silks, velvets, and wines. Other manufactures of importance are porcelain, glassware, chemicals, and sugar. There are many important industries connected with furniture, carriages, dress, and articles of luxury.

*Silk Culture.*—Silk is derived from the silkworm, which is the caterpillar stage of a kind of moth whose best food consists of the white mulberry. When it is about to pass into a still condition, similar to the chrysalis of a butterfly, it spins its cocoon from two jelly-like masses which exist in itself and harden as exposed to the air. It sends this substance through two minute openings at its head; the two streams unite at once, forming a very fine thread which the worm coils around itself, forming the cocoon.

From the cocoons the raw silk is directly obtained. The thread of a single cocoon is too fine for use in spinning and weaving; hence, the threads from several cocoons are usually reeled off together.

Silkworms are usually reared under cover; they are thus protected against injurious conditions of the weather; the trees are stripped of their leaves to supply them with food. The tending of the silkworms, previous to the spinning of the cocoons and the operations necessary to prepare the silk for market, require not only considerable labor, but great carefulness, delicacy, and patience on the part of those employed. The high wages in the United States for other industries prevents the great development of this industry, although it is carried on in California and some other localities.

#### PEOPLE.

What sections are densely populated? Sparsely populated? Why? From what Aryan branches was the French language derived?

The majority of the people are Roman Catholics. Elementary *education* is free and compulsory. There are many secondary schools and higher institutions of learning for both sexes which are nearly free.

What is the form of *government*? The executive power is vested in the President and ministry; the legislative in the Chamber of Deputies and the Senate. The Deputies are elected by the people for a term of five years. In the Senate, a certain number are nominated for life by the government; and one-third of the remaining number are elected every three years. Compare with the United States, with Switzerland.

France is a great military power, the navy being second to that of Great Britain.

#### CITIES.

Name and locate the capital; locate Lyons, Marseilles, Bordeaux, Toulon, Lisle, St. Étienne.

*Paris* (The Magnificent) ranks as the third city in the world in population. It possesses magnificent buildings, numerous picture galleries and museums, some of them containing the most valuable pictures and historical treasures. It is the social and fashion center, and the world's emporium for small industries. The celebrated Sèvres porcelain is made in this vicinity.



THE SEINE AND NOTRE DAME.

*Lyons*, the second city of France, lies in the heart of a silk and wine district. It is unrivaled in the manufacture of fine silks, satins, and velvets.

*Marseilles*, the third city in population, is the first in foreign commerce. It has an immense trade with Mediterranean ports, India, Japan, and China. It has great shipyards, and manufactures marine engines and chemicals.

*Bordeaux* is famed for its production of red wine. It is the great shipping port for brandies and wines.

*Toulon* has the great naval arsenal of France.

*Lisle* is one of the greatest linen-manufacturing cities of Europe.

*St. Étienne*, located in the only coal and iron district of any importance, manufactures steel and iron goods.

Government dock-yards are located at *Cherbourg*, *Brest*, *Rocheport*, and *Toulon*; private ship-building yards, at all the chief commercial ports.

*MONACO*, in the extreme southeastern part, is a small independent principality.

#### COMMERCE.

France ranks among the leading commercial nations of Europe. The foreign trade is largely with Great Britain, Germany, Switzerland, and the United States. With fine seaports on three borders, many canals connecting large rivers, and railroads radiating from

Paris in all directions, France has excellent means for carrying on a large domestic and foreign commerce. The Mont Cenis tunnel through the Alps gives access to Northern Italy.

The imports are raw-cotton, food-products, petroleum, lumber, agricultural implements, iron and steel goods. What can the French export?

## BELGIUM.

### LOCATION AND SURFACE.

By what sea and countries is Belgium bounded? Compare its area with other European countries. About how many miles is its coast-line? In what surface division does Belgium lie? Which part consists of a low tableland? What is the general direction of slope? Name a river which crosses the plateau. It is navigable through Belgium. On some sections of the seacoast and river banks, dykes are built to protect the flood-plains of this and another small river.

### CLIMATE AND PRODUCTS.

The climate on the sea is humid, cool, and unhealthful; on the plateau hot summers alternate with cold winters. The rainfall is plentiful; the soil is fertile except on the Dutch frontier, where there is a continuation of the barren and marshy heaths of Holland. So carefully is the land cultivated that Belgium is called the "Garden of Europe."

The principal products are grains, beets, chicory, flax, hemp, hops, and tobacco. Cattle, sheep, and horses are extensively raised for export and home use. Bee and silk culture are encouraged in the unfertile districts. The upland district yields a large supply of wood from the forests, where game also abounds.

Belgium is rich in minerals, ranking second to England in the production of coal and iron, and second to Germany in zinc.

Manufactures are extensive and varied and similar to those of Germany and France. Belgium is famed for its fine quality of linen and woolen goods, which are produced from the home supply of raw material.

### PEOPLE.

Belgium is the most densely populated country in Europe. What is the average number to a square mile? Since 1881 there has been a steady increase in immigration.

The people are a mixture of Celtic and Flemish (Teutonic). French is the language of educated society and in government offices.



Flemish, similar to Dutch, is the language of the majority of the common people.

The dominant *religion* is Roman Catholic.

At present no system of public schools exists, and a large percentage of the population can neither read nor write. The state supports four agricultural schools and nine experimental stations, including a school for forestry. It also provides courses of agricultural lectures for farmers, thus promoting agriculture in all its branches.

What is the form of *government*?

#### CITIES.

Locate Brussels, Antwerp, Ghent, Liege.

*Brussels*, the political and industrial capital, is famed for its manufacture of linen, lace, wool carpets, damasks, and ribbons. What city in the United States is about equal in population?

*Antwerp*, on the estuary of a tidal river, is the principal seaport not only for Belgium, but for the iron and steel of Germany. The United States sends quantities of grain and petroleum here for distribution.

*Ghent*, noted as being the chief seat of cotton and leather manufactures, is made a seaport by means of a ship canal. Flower-culture is a great industry, and a busy trade is carried on with Russia, France, and Germany.

*Liege*, in the heart of the coal and iron district, manufactures firearms and various metal wares.

#### COMMERCE.

The principal exports are coal, flax, linen, woollen and cotton goods, glassware, firearms, and nails. More than one-third of the exports is consigned to France and the remainder to England, Germany, and Holland. Native shipping is small, Great Britain doing most of the carrying. Excellent systems of railways and canals furnish the means for inland transportation.

### SPAIN AND PORTUGAL.

#### LOCATION.

What peninsula is occupied by these kingdoms? Bound each country. Which of the United States is about the size of Spain? Of Portugal? Describe the coast-line. About how many miles has each country? What group of islands east of Spain and belonging to it? What strait separates Spain from Africa? Name and locate the capes on the coast. What sections of America formerly belonged to Spain? To Portugal? What sections in the United States once belonged to Spain? What territory did Spain lose by the war with the United States? When was peace declared?

Since the conclusion of the Spanish-American war, the Spanish possessions are insignificant. They comprise the Canary Islands in the Atlantic and a narrow strip of land on the west coast of Africa. Find each on the maps.

Portugal owns the Azores, Madeira, Cape Verde, and St. Thomas (west of Africa) islands in the Atlantic; Angola on the southwest and Mozambique on the southeast coasts of Africa; some small stations in Asia; and a part of Timor, one of the East Indies. Find each on the maps.

#### SURFACE.

This peninsula consists of a lofty plateau, with a narrow coastal plain on the east and west widening in the southwest. It is traversed by high mountain ranges and dissected by numerous rivers.

Trace the principal divide. By what mountains is it continued in the southeast? What is the general direction of the long slope? What four rivers drain this slope? Where would you expect to find rapids in these rivers? Which of these rivers cross Portugal?

What river flows between the divide and the Pyrenees? From which slope does it receive the greater number of tributaries? Why? Where does it gap the mountains? What other rivers gap the mountains on the edge of the plateau? What mountains form a divide between the northern coast and the Douro basin? Between the Guadiana and Guadalquivir rivers? Between the Tagus and Douro rivers?

Most of the rivers are too much obstructed by shallows and rapids for navigation, and have cut such deep valleys in the plateau that they cannot be connected by canals. The Guadalquivir is the most important navigable river, its volume being maintained during the summer by the melting snows of the lofty Sierras. The Ebro is the only navigable river on the Spanish coast of the Mediterranean. How is its volume maintained?

#### CLIMATE.

What climatic advantages in latitude, position, and prevailing winds has this peninsula? How does the elevation modify them?

The moisture of the western winds is condensed on the edges of the plateau, causing the interior to be dry and the soil barren, without forests and having a scanty vegetation except where it is increased by irrigation. What section of the United States has similar conditions? What must be the condition of most of the Spanish rivers during the summer?

#### OCCUPATIONS AND PRODUCTIONS.

The coastal plains, the slopes, and the lower river valleys have fertile soil and a flourishing vegetation, varying from the grains of

the north to the vineyards, orange groves, and olive groves of the south. There are deciduous forests in the northwest, because of greater rainfall, and forests of cork-oak on the seaward sides of the mountains.

Agriculture is the leading industry, though less than one-third of the land is under cultivation, irrigation being necessary. Garden vegetables, fruits, grains,—especially Indian corn, the staple food,—and the vine are extensively cultivated. Silk culture is important. Spain is famous for fruit products: raisins, wines, and olive oil.



ROYAL PALACE, MADRID.

The mountain sides and plateau furnish pasturage for cattle, swine, and goats, which are extensively raised. Less attention is given than formerly to the raising of the fine-wool merino sheep.

There are valuable fisheries of sardines, oysters, and tunny.

What minerals are found in this peninsula? The most important which are exported are copper, lead, zinc, iron, and quicksilver. The quicksilver mines located at Almaden are the richest in the world. Mining, manufacturing, and trade are important industries.

The chief manufacturing districts are in the lower part of the Ebro basin and in the provinces of the North. Among important manufactured articles are cotton fabrics, corks, paper from the esparto grass, soap, and iron.

#### PEOPLE.

Where is the population most dense? Which type of the Caucasian race inhabits this peninsula?

The *religion* is Roman Catholic.

*Education* varies in different provinces and among different

classes. As a whole, the elementary schools of Spain are in a wretched condition, and ignorance prevails among the poorer classes. Only about one-fourth of the people can read and write.

Portugal has a better system of schools and better technical, agricultural, and art schools.

Spain is one of the most non-progressive nations in the world. Outside of the cities no progress has been made in centuries. The wooden plow, and goat-skins for holding wine are still used.

A nation's sports are typical of its character and culture. The bullfight, a cruel and degrading sight, is the national sport of Spain, and is witnessed by all classes of people. The most noted circuses are in Madrid and Seville. Basket-ball, the game of the northern provinces, is now played in many Spanish cities. It is a manly, vigorous sport, and may eventually redeem Spain from the curse of bullfights.

What form of *government* has each country? Who is the present ruler of each?

#### CITIES.

Name and locate the capital of each. Locate Barcelona, Valencia, Malaga, Seville, Cadiz, Granada, Oporto, Palos, Toledo.

*Madrid* is the largest city, and is connected with the principal trade centers and seaports by about 7000 miles of railroad. It owes its importance solely to



ENTRANCE TO TOLEDO.

its being a political capital. What city in the United States has about the same population? What cities of the United States are nearly in the same latitude?

*Barcelona*, the chief seaport, is the leading manufacturing center.

*Valencia*, an important seaport, manufactures silk, wool, and hempen goods. It exports raisins, fruits, olive-oil, and wine.

*Granada, Malaga, and Seville* are the most beautiful cities of Spain. *Malaga* is famed for its fruits, raisins, and Muscatel. *Seville* exports oranges, manufactures firearms, porcelain, and ironware.

*Cadiz* manufactures soap and glass.

From *Palos* Columbus sailed on his first great voyage of discovery.

*ANDORRA*, in the Pyrenees, is a republic under the united influence of France and Spain.

*Lisbon*, the chief commercial city of Portugal, exports wool, olive-oil, and wine.

*Oporto* exports Port, manufactures laces and brocades.

#### COMMERCE.

The principal exports are cork, wool, leather, fruits, such as olives, figs, almonds, pomegranates, grapes, oranges, and their products. What are some of these products?

Domestic commerce is active, and is carried on in the interior by means of mules, as there are no good roads; and by railroads, which usually follow the river valleys.

Three lines of railway—one at either end and one through the center of the Pyrenees—connect Spain with the French and other European railways. Spain has a small mercantile fleet, mostly engaged in the coasting trade and in carrying goods for other countries, as her own foreign commerce is small.

### SWITZERLAND.

#### LOCATION.

In what part of Europe is Switzerland? In what direction from England? In what direction from Spain? What country north of it? East of it? South of it? West of it? How does it compare in size with other European countries? Which of the United States are smaller? What two States together about equal it in size? Compare it with your own State in size.

#### SURFACE.

On what plateau is it situated? What relation has this section to the European Divide? What four rivers have their sources on this plateau? To what sea basins does each belong? How is the volume of each maintained?

Locate the Jura and Alps mountains. What spur extends eastward into the Balkan Peninsula? What lakes are on the Alpine Plateau? Which forms a partial boundary? There are many small lakes and waterfalls which add beauty to the scenery.

## CLIMATE.

What part of the United States lies in the same latitude? What influence operates to make Switzerland colder than France? On which sides of the mountains and in what valleys is it warmer? What can you tell of the rainfall?

## PRODUCTIONS AND OCCUPATIONS.

What belts of vegetation extend from the valleys, where fruits, the vine, and mulberry flourish, to the snow-clad peaks?

Most of the soil is unsuited for cultivation. Why? One-sixth of the surface consists of forests; about one-ninth is cultivated and



SWISS MOUNTAIN CHÂLET.

more than one-half consists of meadows and pastures. Apple orchards are numerous.

Plentiful rainfall on the mountain sides makes them exceedingly valuable for cattle-rearing. Cheese and condensed milk are the export products of this great industry. Sheep and goats are extensively raised. Since few people are engaged in farming, food-products and wines are imported.

Switzerland has no minerals of importance.

The people are largely engaged in manufacturing, which is favored by an abundance of water-power. Many articles are hand-made. The Swiss are noted for their fine wood-carving.

The Swiss import raw material, coal, iron, and steel for machinery. They are able to do this and to compete with other countries because of the skilled labor, due to a careful technical education.

The manufactures are silk, cotton, linen, and paper goods, embroideries, chamois leather, music boxes, mathematical instruments, and chronometers; the most widely known are Swiss watches and clocks, for which Geneva is famous. It is said that every family has a jeweler.

### SWITZERLAND

The population is 2,500,000. The people are mostly Protestants. How?



JUNOBER, SWITZERLAND

The greater number speak German. French is spoken in the South-west, Italian in the South; Romanish, a Latin dialect, in the South-east.

In 1875, the majority are Protestants.

Education is compulsory and unsectarian. There are several universities after the German model, and many technical and farm-schools.

In 1875, Switzerland is a federal republic. It consists of twenty-two cantons, each having a legislature of its own. The Federal Assembly consists of two houses—the State Council and the National Council. The State Council is made up of two members from each canton; the National Council consists of members elected by the people.

The President and Vice-President are elected annually by a joint meeting of the two houses of the Federal Assembly.

The Swiss are known for their neutrality and their love of peace.

Switzerland is a country of lakes and mountains. The most famous lakes are the Geneva, the Lucerne, and the Zurich lakes.

The Swiss are known for their love of peace and their love of their country. They are a brave and loyal people.



*Basel* is noted for the manufacture of beautiful ribbons.

*St. Gallen* has long been famous for its hand-made embroideries on linen. Embroidery and sewing machines have caused this industry to reach great magnitude in recent years.

#### COMMERCE.

Transportation is by means of the lakes, mountain roadways, of which Switzerland has the finest in the world, and railroads. The St. Gothard Railroad pierces the mountains by a tunnel more than ten miles in length; other tunnels are being constructed.

Many tourists visit Switzerland every summer and are a source of great revenue to the people.

### ITALY.

#### POSITION AND EXTENT.

Locate the kingdom of Italy. It occupies the greater part of what land form? By what countries and bodies of water is it bordered? About what is its length of coast-line? Name and locate two gulfs and a bay which indent its coast; one cape which projects from the southern extremity. What island at the southwestern extremity? What name is given the narrow body of water which cuts this island from the mainland? What large island northwest of Sicily? What two south of Sicily? To whom does each belong? What island between Corsica and the mainland? Find out for what historical event Elba is noted. Italy varies in width from 90 to 350 miles. About what is its length?

#### SURFACE.

What mountains on the northern and western borders? What mountain chain forms the peninsula? Trace it from the Alps. Through what island and by what cape are these mountains continued in Africa? What plain is nearly inclosed by the mountains in the northern part? What river system drains it? Describe the river. Which slope of this river-basin supplies the greater number of affluents? Can you tell why? What lakes are formed by these affluents in their courses? Locate them. Compare the Po with other rivers of Europe in size and importance. Name two other rivers of Italy. Describe the larger. Where is the coastal plain widest? Narrowest? Can you give any reason for this? How is the northern plain separated from the Mediterranean coastal plain?

In the north and west the Alps descend abruptly to a narrow *piedmont* section which gradually merges into the flood plain of the Po. On the southwest the Alps bend around to the sea, forming low coast ranges which continue eastward to the Adriatic coast, where they curve southward in the rugged and lofty Apennines, forming the "backbone" of the peninsula. They reach their highest elevation,

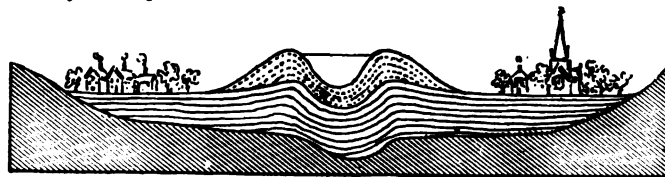
10,000 feet, in the highlands of Naples. From the central ridge many short, steep spurs extend on either side, forming cliffs and headlands. Deep valleys lie between these spurs, and fertile coastal plains extend from the mountains to the sea. How were these plains built up?

Toward the south the Apennines divide, sending out spurs to form two smaller peninsulas making the heel and toe of the long boot-shaped Italian Peninsula. From the toe the mountains are continued in the island of Sicily and Cape Bon.

Extending parallel with the Apennines toward the south is a volcanic belt containing many active volcanoes. The most important are Vesuvius, Etna, Stromboli. Locate each. Stromboli, one of the Lipari Islands, is called the "Lighthouse of the Mediterranean," because it continually emits a bright light which shines far out on the sea at night. An eruption of Vesuvius destroyed two cities in ancient times. Find out all you can about it.

The Apennines come close to the sea on the northwest coast and shelter the narrow coastal plain from the cold north winds. This coast is called the "Riviera" (meaning the shore), and, because of its mild climate, has become a famous winter resort, where amidst orange groves and olive plantations many people reside who cannot endure a more rigorous climate. Two other health resorts are on this coast in France. Name them.

The Po is a good example of a river in its old age or decline. It is fed by the glacial streams of the Alps, and carries an immense amount of detritus. Its course is short and rapid before reaching the plains, where, owing to the change of grade, it loses much of its carrying power and drops the detritus early in its course. It has filled up its channel and formed natural levees which have been strengthened by artificial means. It has an immense delta which is gradually building out and filling up the sea at the rate of 75 yards a year. Many cities formerly on the coast are now far inland. Ravenna, now over 20 miles from the sea, was formerly a seaport. Venice is built on islands formed by the mountain



FLOOD-PLAIN AND LEVEES OF THE PO.

waste which the Po brought to the sea. The northern affluents broaden into deep lakes on the *piedmont*, and are of great interest and beauty. Can you explain why the Adige turns from its course toward the Po and flows parallel with it to the sea? What river of the United States refuses affluents because of similar conditions? The Po is navigable for small steamers to Turin. It has built its channels so high in many places that people on the boats can look down on the housetops in passing. The height of the river above the plain makes it easy to irrigate this section. The water of the river is turned into numerous canals which give moisture to the plain and make it one of the most fertile sections of Europe. These canals are also valuable as a means of transportation.

## CLIMATE.

From the latitude, elevation, and direction of mountains, where would you expect a temperate, salubrious climate with severe winters? Where a more sunny, equable climate? Where a climate of an almost tropical character? Where an unhealthful, malarial climate? Can you give any reasons for this variation of climate in Italy? While the Alps are perpetually snow-clad on their



MOLE AND DUCAL PALACE, VENICE.

summits, the peaks of the Apennines are only covered with snow during the winter. Give two reasons for this difference. How are both the warm and the cold winds shut off from the northern plain? How do the snow-capped Alps affect its climate? How do they increase the rainfall? How does the sea modify the climate? Compare with Spain. Tell why the climate is more agreeable and the vegetation more luxuriant than in Spain.

## PRODUCTIONS AND OCCUPATIONS.

The mountains are clothed with light forests, and the vegetation varies from the grains and fruits of the northern plain and uplands to the vine and tropical fruits of the coastal lowlands. The staple products are grains,—wheat and maize being the most important,—wine, oil, raw silk, olives, fruits, hemp, flax, and pulse. How is each produced?

Agriculture is the principal occupation, though carried on in an old-fashioned way, especially in the southern part, and only about two-fifths of the land is fit for cultivation. The silk culture of Northern Italy is of great importance, and many people are engaged in the preparation of raw silk.

Large numbers of cattle are reared and exported, the uplands providing excellent pasturage and the forage yielding several large crops each year on the irrigated plain. Poultry and eggs are extensively produced for export. The fisheries form an important industry engaging a large number of people. What fish abound in the Mediterranean?

What minerals do you find? Of these the sulphur of Sicily is of the most importance. Elba exports a valuable iron ore to the United States. Italian marbles are of fine quality and of great value—the fine product of Carara, on the Gulf of Genoa, being used for statues throughout the world.

Italy is not a manufacturing country, although silk, woolen, and cotton fabrics, articles of luxury—porcelain, crystal, coral jewelry, shell cameos, and marble carvings—are produced. Italy has furnished to the world more famous sculptors and painters than any other country.

#### PEOPLE.

To what race do the Italians belong? From what is their language derived? What is the average number to a square mile? How does the density of population compare with the other European countries you have studied? Can you give any reason for the large number of emigrants from this country?

Great efforts are being made to promote *education*. All children between the ages of six and nine are required to attend an elementary school. Compare with the length of time you are required to attend school. What will be the difference in the results? There are several universities supported by the state, those of Naples, Turin, Rome, Palermo, and Genoa being most important. Locate each of these cities? The dominant *religion* is Roman Catholic. What is the *government*? Who is the present ruler?

#### CITIES.

Locate Venice, Milan, Florence, Catania, Brindisi.

*Rome*, once the mistress of the civilized world, is now noted for its many churches and ruins of ancient grandeur and greatness. St. Peter's, the largest church in the world, is located here; also the Papal Palace of the Vatican, the Pope's residence. The Vatican is a collection of palaces, churches, museums, libraries, and art galleries. They occupy a great area and contain nearly sixteen thousand apartments. Some of these were beautifully decorated by Michael Angelo and Raphael, the two greatest Italian artists. Find out what you can of these decorations and artists. The Vatican library is the finest in Europe.

*Naples*, the largest city in Italy, is beautifully situated on the bay about five miles from Mt. Vesuvius, the only active volcano on the mainland of Europe.

*Florence, The Beautiful*, is one of the finest Italian cities and celebrated for its palaces and unrivaled art treasures.

*Milan, The Grand*, one of the richest cities in Italy, is the center of the silk trade. It possesses a magnificent white marble cathedral which is, next to St. Peter's at Rome and the Seville Cathedral, Spain, the largest church in Europe. It is on the railway which extends northward through the St. Gothard Tunnel, and is at the point of convergence for the roads through the northern passes of the Alps.

*Turin* is the converging point for three passes across the Alps and is on the railway which passes the Alps through the Mont Cenis Tunnel from France.



ST. PETER'S AT ROME.

*Genoa* is the leading commercial city and seaport from which the products of Northern Italy are exported. For what historical event is it noted?

*Venice* is a busy seaport. Find out all you can about this peculiar city.

*Brindisi* is connected with Paris by the Mont Cenis Railway. From it mail steamers sail to Asiatic ports *via* the Suez Canal.

*Catania* is the port through which great quantities of sulphur are exported. What other seaports has Sicily? Name one on the Sardinian coast.

SAN MARINO is a small independent republic. Where is it?

#### COMMERCE.

The leading exports are raw silk and silk manufactures, fruits, oil, and wine. The chief imports are raw cotton, wool, and wheat. The larger number of imports are from Great Britain; Switzerland receives the greater part of the exports. Trade is carried on, however, with the leading countries of Europe and the United States. By what means are goods exchanged with Switzerland, Austria-Hungary, France, England, United States?

## AUSTRIA-HUNGARY.

### LOCATION.

What countries, states, and sea border Austria-Hungary? On which country is the longer boundary? How does Austria-Hungary compare in size with other European countries? Which of our States is about the same size? Locate the provinces—Hungary, Bohemia, Tyrol, and Transylvania.

### SURFACE.

Nearly three-fourths of the surface is mountainous. In what part of the empire is the Alpine Plateau? The plateau of Bohemia and the Carpathians belong to the secondary highlands. Locate them.

What mountains on the border of Roumania? Of what range are they a continuation? What mountains on the German border? What does the interior



SALZBURG, AUSTRIA.

comprise? The Plain of Hungary contains about one-half of the area of Austria-Hungary; marshes and swamps still abound. Why?

What is the general direction of slope? How do we know this? Why does it not slope to the sea?

Trace the central divide of Europe across this country. What rivers rising here flow northwestward? Where does the Danube gap the highlands? At the "iron gate" the rocks have been blasted and removed to admit of continuous

navigation. In what direction is the southern part of the Tyrol drained? The northern part? Describe the Inn River, the Drave, Save, Theiss, and the largest eastern tributary of the Theiss.

#### CLIMATE.

Between what parallels of latitude does the empire extend? Describe the climate from your knowledge of that of other countries with similar surface conditions. How is the plain protected from the cold of the North and the heat of the South? It lies so far inland, however, that it is subject to a continental climate with extremes of heat and cold. The greatest rainfall is in the Alps, the least eastward across the Plain of Hungary.

#### OCCUPATIONS AND PRODUCTIONS.

More than five-sixths of the surface is productive, either for forests, pasture, meadows, or tillage. Agriculture is not far advanced, but there is a variety of products. The vine and corn grow everywhere below latitude  $49^{\circ}$  and in favored localities north of that.

In the better protected localities of the southern section, olives, rice, oranges, lemons, and prunes ripen. Other products of the country are similar to those of Germany, Switzerland, and Southern Russia.

About one-third of the productive surface is covered with forests, which are valuable for lumber, an important export and for tar, potash, charcoal, and cork-bark. What industries are thus promoted?

The Tyrol is the chief center for silk culture, which is controlled by the government.

The mineral wealth of no other country surpasses Austria-Hungary, and mining is an important industry promoted by the government. All the useful metals except platinum are found. Building stone, clays, salt, and a great variety of precious stones abound. The province of Transylvania is especially rich in rock-salt. The most wonderful salt mines in the world are near Cracow. There are many mineral springs in Bohemia, of which Carlsbad is the most widely known. Locate.

The government is giving especial attention and encouragement to the rearing of horses, sheep, and swine. Large numbers of cattle and goats are raised. Wild animals live among the mountains, the beaver and others being valuable for fur.

The Danube and Theiss, with numerous other streams, lakes, and ponds, furnish productive fisheries; the sea-fisheries are valuable. Leeches form an article of export from Hungary and Moravia. For what are they used? How procured?

Manufacturing is making rapid advancement, and much raw material is imported. It is carried on in all parts, much of the wool, flax, and hemp being spun in the farmhouses, while nearly every town makes linen, hempen, and woolen goods.

The northwestern part is the principal manufacturing section.



Cotton and woolen goods, Bohemian glass, and paper are made. Silk manufacture is extensive in the southern part. The manufacture of tobacco and the production of salt are state monopolies, from which large revenues are derived. Austria-Hungary ranks second only to France in the production of wines.

#### PEOPLE.

What sections are densely populated? What ones sparsely settled? Why?

The population embraces a greater number of branches of the Caucasian race than any other European country. Slavs equal nearly one-half of the entire population, consisting of Bohemians, Moravians, Hungarians; Germans number about one-fourth; the Magyars, a Mongolic group, one-sixth; and the remainder is made up of Roumanians, Jews, Armenians, and gypsies. A country having so many different nationalities is made weak, since there can be no common interest. The principal languages are German, Hungarian, and Bohemian.

A large majority of the people are Roman Catholic; there are many Orthodox Greeks, Armenians, Lutherans, and Jews.

The government has provided amply for *education*. There are numerous institutions for higher learning in universities, technical institutions, military and national academies, teachers' training schools, schools of science, art, music, commerce, mining, and agriculture. The law enforces compulsory attendance upon all children between the ages of six and twelve at the national schools. These are in the hands of the Roman Catholic clergy to a great extent. Where Protestants or Jews have established schools of their own, the children are excused from national schools.

Military service is compulsory on all citizens capable of bearing arms for a term of twelve years. What effect has this on emigration?

#### GOVERNMENT.

This empire comprises the two states of Austria and Hungary united under one monarch. Each state has its own parliament and its own laws. The central government, which consists of delegates sent from the two parliaments, deals with their common interests.

In what cities do the two parliaments meet? Who is the present ruler? Where does he live? Where does the central government convene?

#### CITIES.

Locate *Vienna*. How does it rank in size among European cities; among cities of the United States?

It is the capital and chief industrial city of the empire, and a center of trade and finance. It is noted for its higher institutions of learning, its art galleries,

museums, beautiful buildings, and its public hospital. Among its noted manufactures are machinery, scientific and musical instruments, artistic goods in leather, terra-cotta, bent-wood furniture, meerschaum pipes.

Locate Buda-pest, Prague, Trieste, Fiume.

*Buda-pest*, the capital of Hungary, lies on both banks of the Danube. It is the center of the cattle, grain, and wine trade of the surrounding plains. Flour milling is its leading industry.

*Trieste*, the principal seaport, is the seat of the Austrian Lloyd Company, whose trade is largely with the East Indies, Venice, Turkey, and Egypt.



AUSTRIA. BUDA-PEST.

*Trieste* and *Fiume* have extensive shipyards; the latter also manufactures rope and tobacco.

The principality of *LIECHTENSTEIN*, between Switzerland and Austria, practically belongs to Austria-Hungary.

#### COMMERCE.

Most of the trade is between different Austrian provinces, though there is considerable foreign commerce, two-thirds of which is with Germany. The next best markets are Russia, Roumania, Servia, and Italy. What are exported?

The Danube is navigable for its entire course through the empire, and its tributaries are navigable for considerable distances. It is in communication with the North Sea through the Rhine, to which it is connected by a canal. Fine highways have been built over the Alps; through the empire the constructing of nearly 20,000 miles of railroad has brought important places into communication.

By what route would goods be shipped from Vienna to New York? To Odessa? To Bombay?

## EUROPEAN TURKEY.

## LOCATION.

European Turkey is only a small part of the Turkish Empire, which occupies the peninsula of Asia Minor and other portions of southwestern Asia, and claims portions of northern Africa and the island of Crete.

Since Dec. 21, 1898, Prince George of Greece has been High Commissioner, or Governor, of Crete under the four powers—Great Britain, Russia, France, Italy. While acknowledging Turkish authority, he has, in co-operation with the general assembly, organized and established an autonomous government, guaranteeing religious freedom and security of life and property to all people of the island.

Bound European Turkey. Where does it approach nearest to Asia Minor? It controls the entrance to the Black Sea. By what straits and sea?

Describe the surface and drainage. The climate and the productions resemble those of what countries? In what sections are the greatest extremes of heat and cold? What sections are sheltered from the cold winds, and modified by the winds from the sea?



A TURKISH LADY.

The mountains in the northern part are covered with forests.

The soil is fertile, but agriculture is very backward, and more land is used for pasturage than is cultivated. Large quantities of raisins are produced and exported. A special industry is the cultivation of roses for producing the valuable perfume, "Attar of Roses."

There are valuable mines, which are not worked.

Manufactures are few and mostly of local importance. The only industry which furnishes an export of importance is the manufacturing of Turkish carpets.

## PEOPLE.

To what race do the Turks belong? What is their religion? Their government? Absolute power is vested in the Sultan. Where does he live and make his laws? Locate the capital.

*Constantinople* is greatly favored in position, being in the center of the foreign and domestic commerce of the Turkish Empire.

The government of Turkey is poor, and the civilization so degraded in the

countries upon which it depends for Western trade that Constantinople is not a great seaport. Name and locate a seaport on the *Ægean* Sea.

#### COMMERCE.

What must Turkey import? There is much buying and selling of the products of Asia.

Trade is conducted principally by Jews, Greeks, and foreigners. Roads are very poor, and there are few railways to encourage domestic commerce. Two main lines of railway starting from Constantinople and Saloniki place Turkey in communication with the rest of Europe. A large caravan trade with Asia is carried on in Constantinople.

### MINOR STATES OF THE BALKAN PENINSULA.

#### BULGARIA.

This principality is independent, though nominally tributary to Turkey. How is it bounded? What part of the Primary Highland crosses it? What is the slope and drainage of the northern part? Describe the climate. What difference must there be between the north and the south? Why?

Forests cover the mountains; wild animals infest them. The lowlands are adapted to agriculture; the hillsides to pasturage. What are the products?

The people are a mixture of Turks and Slavs. The religion is Greek Orthodox. Name the capital; chief seaport.

#### ROUMANIA.

This kingdom was named from the Romans, who settled it.

What waters, countries, and states border it? Of what plain is its surface a continuation? What mountains on its boundary? How does the peculiar curve of these mountains affect the slope? What river forms a partial boundary? Describe its course after it leaves Austria-Hungary. Why does it not flow directly to the sea?

Describe the climate and productions. Trade is chiefly with Austria by means of railroads and the river. Name and locate the capital.

#### SERVIA.

What countries lie around this kingdom? Describe its surface and drainage.

It is well watered. A great portion is covered with dense forests of chestnut, oak, and fruit trees. What do these yield?

The principal occupation is the rearing of cattle; and swine, which feed on the chestnuts.

Locate the capital. It is strongly fortified.

## MONTENEGRO.

Locate Montenegro. What countries and water bound it? What mountains cross it?

The country is wild and rugged, and the mountains are covered with forests. The people are little more than half-civilized. The principal occupations are fishing, farming in the rudest manner, and pasturing cattle.

Name and locate the capital. It is the only town.

## GREECE.

## LOCATION.

What part of the Balkan Peninsula is occupied by Greece? What natural land-form is Greece? Bound it.

By what isthmus is the southern part connected with the northern part? By what gulf is it nearly separated? The Grecian Archipelago and the Ionian Isles are a part of this country. Locate them. How does the extent of coastline compare with the area? What can you say of the harbors? How does this influence the industries of the people?

## SURFACE.

Greece is generally mountainous, with many fertile valleys. The rivers are insignificant. Why? What range of mountains is an extension of the Dinaric Alps? In what direction do they extend? They are continued in the Archipelago to what mountains in Asia?

## CLIMATE AND PRODUCTIONS.

Describe the climate and productions from your knowledge of other southern European countries. How does its distance from the Atlantic affect the climate?

Although the peasants own their farms, only a small part of the arable land is tilled and that in the rudest manner. A kind of small grape, belonging almost exclusively to Greece, is extensively cultivated and exported. It is the dried currant of commerce.

Bee culture is a considerable industry.

Many of the people are shepherds. Coarse wool is exported. Goat-skins are made into vessels for holding oil, wine, and honey. The sponge and coral fisheries are valuable.

The mineral deposits have not been worked to any extent. In several islands there are quarries of fine marble of various colors.

Manufactures are few and small, mostly home-made cloths for clothing. The people are skilled in gold and silver embroideries. Ship-building is important in most of the seaports.

## PEOPLE.

The Grecians are distinctly a seafaring people. Why? They conduct most of the commerce of the Mediterranean and Black seas. Railways connect the interior towns with the seaports. An important ship-canal has been cut across the Isthmus of Corinth.

Greek is spoken, but the ancient tongue has been somewhat corrupted. What has caused it? The *religion* is Orthodox Greek.



MODERN ATHENS. MT. LYCABETTUS.

*Education* is universal. All classes are educated in a greater or less degree and are intensely patriotic. The Greeks were, with the Romans, the leading people of ancient times.

What is the *government*? Locate the capital.

## CITIES.

*Athens* lies five miles from the coast; it was the most celebrated city of ancient Greece, and produced some of the most famous poets, orators, and sculptors the world has ever known. The Acropolis or citadel of Athens is a rocky eminence overhanging the city. On its summit are the ruins of the Parthenon, one of the most famous temples of ancient Greece.

*Piræus*, the seaport of Athens, to which it is connected by rail, is the chief manufacturing town of Greece and the center of the export and import trade.

## SOUTH AMERICA.

### LOCATION.

In what part of the Western Hemisphere is South America situated? By what waters is it nearly surrounded? By what isthmus is it connected with North America? Point to it and tell its direction from us. In what direction is it from Europe? From Africa? From Australia? Imagine yourself in South America and tell in what direction each of the other continents lies.

Between what parallels of latitude does it lie? In what belt is the greater part? What other continent lies partly within these parallels? What one lies wholly within them? Between what meridians of longitude does it lie? Trace these meridians to the North Pole and tell through what part of North America and Greenland they pass.

South America is about three-fourths as large as North America and has about twice the area of the United States. How does it rank in size among the continents of the world? Find its greatest length and breadth in miles. What is its general shape? Which side is longest? Which shortest?

Compare the coast with that of North America. Why is the Pacific coast of each so regular?

Each has a chain of rocky coast-islands extending near to and parallel with the western coast-line. The southern and southwestern coast of South America is high and rocky, with deep fiords and many coast-islands, showing that this section is slightly drowned. From the deposits of sea-shells, and terraces marking old shore-lines on the western slope of the Andes, we know that it has been more deeply submerged at some previous time. In the mouths of what rivers are there evidences of submergence?

Which river is building out the continent at its mouth? Compare with the river mouths on the coast of North America. About how many miles in length is the coast of South America? Which coast has better harbors, the eastern or the western? Why? What industries do good harbors promote?

What are the principal indentations? Of what use are indentations? Name and locate prominent projections. To what surface features do indentations and projections each correspond? Locate Trinidad Island. Most of the asphalt used in paving our streets comes from this island. To what government does it belong? Locate Lake Maracaibo. It is wrongly called a lake. What name would you give it?

Locate the Island of Marajo. How was it formed? This island is covered with grass which feeds large herds of cattle and horses. Where are the Falkland Islands? To whom do they belong? They have a damp, foggy climate and are largely covered with peat; are inhabited by a small number of people who are engaged in cattle and sheep-raising. There are no trees or reptiles on these islands. Many vessels stop here for supplies and repairs.



The Archipelago of Tierra del Fuego (meaning Land of Fire) lies at the southern extremity of South America. It is about the size of Great Britain. Of what mountain range are these islands a continuation? The waters of what straits flow in the great transverse valley which separates this archipelago from the mainland? What important headland on an island is this group?

A singular ocean post-office has been established in these straits. A little box firmly fastened by a chain, is suspended from a prominent headland facing Tierra del Fuego. It is opened by every passing vessel, either to deposit or take out letters. Every ship undertakes the free delivery of all such letters addressed to places in its course. It speaks well for seafaring men that no abuse of this confidence has been reported.

The stormy climate of Tierra del Fuego makes it one of the most dreary and inhospitable regions in the world. Its equable temperature and abundant moisture, however, favor certain kinds of plant-life. The potato and the beautiful fuchsia are native here, and large areas are densely wooded. There are few land animals, insects, or birds, but gigantic sea-weeds shelter great numbers of shell-fish. Shoals of fish frequent the shores, and in their wake come armies of seal and clouds of sea-fowl. The inhabitants are among the lowest in civilization, and live by fishing and hunting.

At the island of Chiloe ships stop for supplies and repairs. Where is it? Locate Juan Fernandez; the Galapagos Islands.

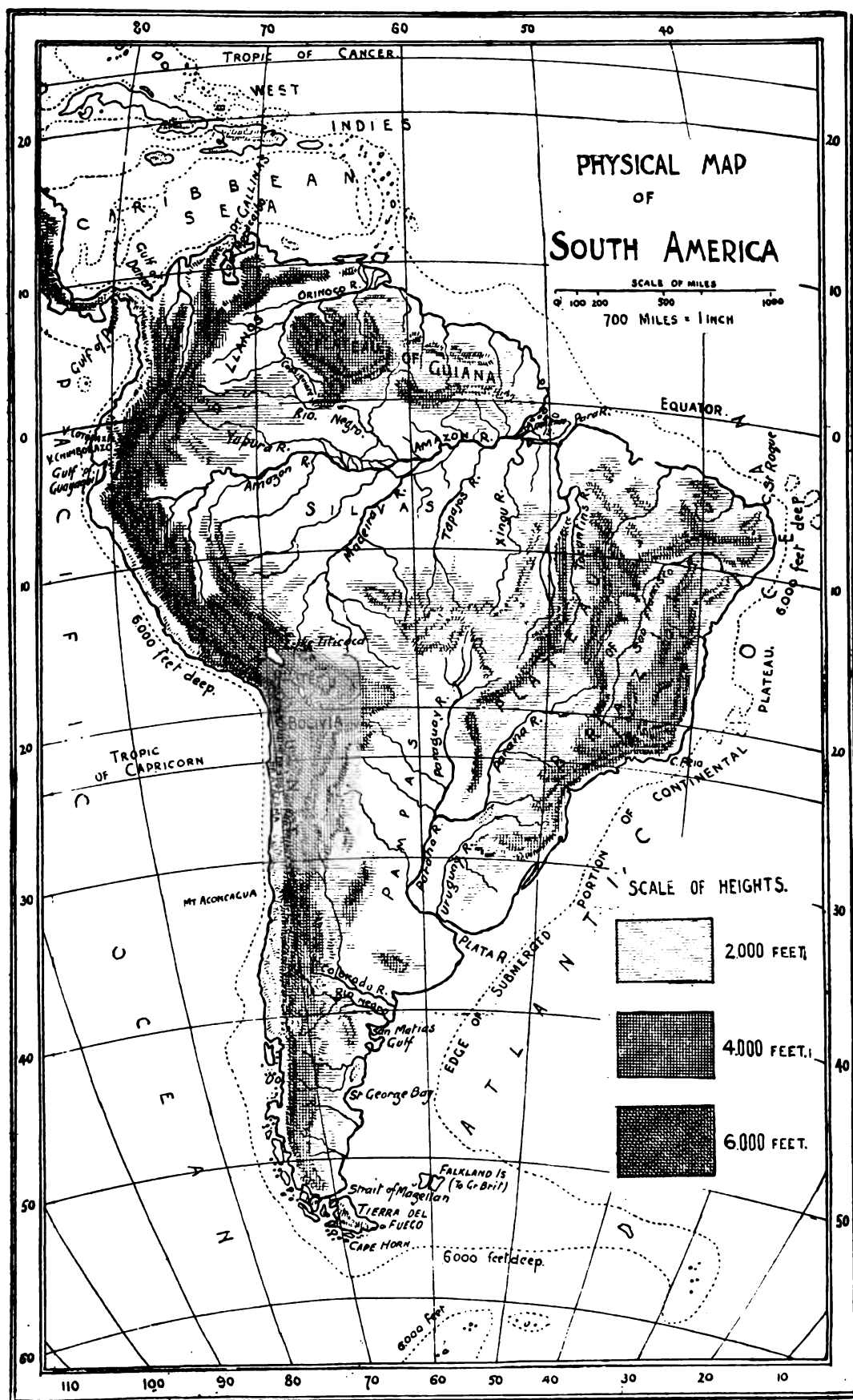
Juan Fernandez, the island famed in "Robinson Crusoe," lies about four hundred miles from the mainland and belongs to Chili. During a time of war the crew of an English privateer remained here for some time. It is said that one of their number, a Scotchman, after quarreling with his captain, resolved to leave the ship and stay on the island. Just before the ship sailed he was landed with all his belongings. These consisted of a chest of clothing, a musket, a pound of powder, some balls, a kettle, a knife, a few pounds of tobacco, and the Holy Bible. The musket he afterward took home with him. Upon his story Defoe founded his famous book.

The Galapagos are a group of several volcanic islands, the upper portions of which are heavily wooded while the lower parts are barren. They are sparsely settled. They are famed for their enormous turtles, which often weigh 1500 pounds each. To whom do they belong? Compare the islands lying off the coast of South America with those of North America in size and number.

#### SURFACE.

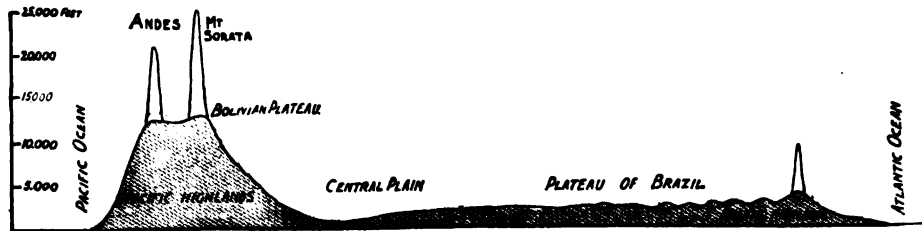
The Primary Highlands of South America extend along the western coast. They are a continuation of the Primary Highlands of North America. The two form an almost unbroken highland from Bering Sea to Cape Horn. How is the isthmus formed? By what islands and across what strait is this great highland continued to the Asiatic highlands?





These highlands of South America are more compact, higher, narrower, and border the Pacific coast more closely than those of North America. They are from two hundred to three hundred miles wide; have no longitudinal valleys on the western, and few on the eastern slope. In what direction is the general continental slope? How do you know this? What must be the character of the streams flowing down the western slope? Compare the eastern and western slopes for other differences. What plateau in these highlands?

The Secondary Highlands extend along the eastern and north-eastern coasts. Name the two plateaus which form these highlands. What three great river-basins do they help to form? About two-thirds of the surface of the continent consists of a vast alluvial plain which occupies the depression between the Primary and Secondary Highlands, and extends from the northern coast to the Straits of Magellan. Can you tell how it has been made?



Low water-partings cross this plain, connecting the Andes with the Brazilian and Guiana plateaus, dividing its surface into three sections and three distinct slopes. Name the sections. Tell the direction of each slope. A narrow coastal plain borders the eastern coast, merging into the great lowlands in the flood plains of the great rivers. A narrow coastal plain also borders the western coast.

The Andes Mountains form one of the grandest systems in the world. They rise high and rocky at the southern extremity and continue along the western coast in a single chain, rising higher and higher, spreading out into two almost parallel ranges, in about the central part of their course, to inclose the Plateau of Bolivia, where they reach their greatest height. The plateau is about two and one-half miles high. How does it compare in height with the western plateau of the North American continent? Many Andean peaks on this plateau reach a height of over four miles.

Northward from the Bolivian Plateau the Andes gradually descend to the Caribbean Sea. From this plateau they continue in two, sometimes three, ridges which are somewhat broken up and connected by spurs forming great mountain groups or knots, inclosing lofty tablelands, all gradually merging into one range near the equator. North of the equator this range spreads out into three distinct chains between which lie deep, narrow valleys.

One range extends toward the northwest, where it is lost in the hilly ridge of the Isthmus of Panama; another extends toward the

northeast, forming a low range along the northern shore. What water-parting does it form? What island is its continuation into the sea? The middle chain extends directly north, having a long valley on either side. What river drains these valleys? It is navigable for many miles. Describe it.

Throughout their entire length the Andes evidence great volcanic action, many of the peaks being extinct volcanic cones, while between forty and fifty are still active; earthquakes are frequent, sometimes causing serious loss of life. Cotopaxi, the fiercest volcano in the world, is the most symmetrical of five active volcanic cones which can be seen standing out in snowy grandeur from the city of Quito. Locate the group.

Locate Mt. Aconcagua. How does it compare in height with the peaks of North America? Of the world? Later reports show that higher peaks exist in South America on the Bolivian Plateau. Name and locate two peaks on this plateau. There are many deeply cut transverse valleys in the Andes, but there are few mountain passes except in the extreme north and south.

There are a few frightful perpendicular transverse rents forming narrow, dangerous passes, or gullies, sometimes a mile in depth and

always from two to three miles above the sea-level. Most of them can be traveled only by means of llamas, mules, or pack-men.



A HERD OF LLAMAS.

The peaks of the Andes, even in the Torrid Zone, are covered with perpetual snow, and are the sources of many glaciers. These glaciers give rise to wild mountain torrents which are loaded with the eroded

material from the mountains. What great river system has its source among these mountain torrents?

The Brazilian Highlands consist of a broad, low tableland, less than one-sixth the height of the Bolivian Plateau; it is traversed by several low mountain ranges, which are little more than water-partings, except on the eastern border. Here it reaches its highest elevation, and has a few mountain peaks, the highest being about two miles. It has no volcanoes.

There is an abrupt eastern slope to the narrow coastal plain, and a gradual western slope to the central plain. How have the courses of the rivers been influenced by these facts? Name and describe the



only large river which finds its way down the eastern slope of this plateau to the sea.

How did the Guiana Plateau come to be separated from the Brazilian Plateau? This plateau is about the same elevation as the Brazilian, reaching its greatest height in the low mountains on its southern and western borders. The mountains are flat-topped, and the rivers have cut deep valleys and gorges across the plateau. This tells us that the Secondary Highlands are much older than the Primary Highlands. What forces have caused this?

In what direction do most of the rivers flow from this plateau? Trace the divides which limit each of the three great river-basins. Tell from what other basin each is separated. Which is the largest river-basin? The smallest? Compare with the three largest river-basins of North America. About what portion of the entire area is occupied by the Amazon basin?

Describe the Orinoco and name its principal tributary. Its upper basin is covered with forests. What name is given to its flood-plains? In what part of its course does it flow most rapidly? Why? It flows into the sea through fifty mouths. Why does it build this delta?

The Orinoco affords continuous steamer navigation for over a thousand miles. In the early summer, during the season of equa-



SOUTH AMERICAN INDIANS.—AMAZON REGION.

torial rains north of the equator, the rivers are swollen and quickly overspread their flood-plains, causing the Llanos to become a great shallow lake. Grass springs up, green, fresh, and abundant, and affords pasturage for immense herds of cattle and horses and droves of sheep. There is abundant life everywhere.

*The Llanos* are nearly treeless with the exception of palms, which fringe the river banks and cluster in the swampy portions and on the delta. The delta is submerged during the rainy season, and the inhabitants build their houses in the tree-tops. As the dry season advances everything changes; the grass dries, the earth is parched until great openings or cracks on the surface appear; millions of

horses and cattle are driven to the foothills of the Andes for pasturage; reptiles and toads bury themselves in the soil to await the return of the wet season. The natives now set fire to the dry herbage in order to secure a fine fresh carpet of green turf the next season. Compare the Orinoco and the Mackenzie; the Orinoco and the St. Lawrence.

*The Amazon*, meaning "boat-destroyer," rises among the Andes, about sixty miles from the Pacific, and flows for nearly four thousand miles across the continent. With its tributaries it affords navigation for ocean steamers for nearly 2500 miles and for smaller vessels to the foot of the Andes.

It carries an immense volume of water; is said to pour more water into the sea than the ten largest Asiatic rivers. It is of great depth and several miles wide; near its mouth it looks like an open sea. For a distance of six hundred miles out at sea the muddy waters can be traced. Why? This river has an immense flood-plain, most of which is covered with dense forests. What name is given to it? What kind of a mouth has the Amazon? With this enormous flood-plain, why is there no delta? This section of the coast is being submerged. How do people know this?

Describe the Amazon; its largest northern tributary; its four large southern tributaries. Which is the largest? Which drains the northern part of the Bolivian Plateau? Compare the Amazon with both the Mississippi and the St. Lawrence in all the ways you can. Which has a similar mouth? Which is of greater value commercially, the Amazon or the St. Lawrence? The Amazon or the Mississippi? Why? Describe the Tocantins and its estuary, the Para River. Steamers pass through the Para estuary instead of the main one north of Marajo Island, as the latter has many rocky islands and shallows.

*The Selvas* is a dense forest containing a numberless variety of plants and trees, from which valuable woods are obtained. This vast area is deeply covered with layer upon layer of rich vegetable mold, which, together with the excessive heat and rains, causes the trees to attain gigantic size, and the shrubs, plants, and vines to form an entangling and impenetrable undergrowth.

In the midst of this forest it is dark and gloomy on the brightest days and the sun's rays never reach the surface. The most beautiful insects and birds in the world live here. Monkeys and wild animals are numerous; but the animals, excepting the reptiles, do not attain the size that they do in forests where the vegetable growth is less overpowering.

*The Plata Basin*, named from the estuary, which is a good example of a drowned river-valley, is drained by the Parana River system. Describe the Parana and its largest tributary. It is navigable for more than a thousand miles, the best waterway being that of the Paraguay and lower Parana. The principal drawback to shipping is the extreme shallowness of the estuary. Can you tell what causes this?

*The Parana* pours more water into the sea than the Mississippi.



How do their drainage areas compare? What other river flows into the Plata estuary? Describe it.

*The Pampas* are grassy fields or prairies occupying the southern portion of the low plain of the Plata basin and extending southward, merging into a gravel region; northward they merge into a forest region, and westward into low, marshy salt plains before reaching the highlands. Immense herds of wild cattle and horses feed on the Pampas. What industries are thus promoted? How do the central plains of North America resemble the Pampas? Compare the Plata basin with the Mississippi basin. Where in the courses of the rivers of South America would you expect to find waterfalls?

Locate *Lake Titicaca*. It is the highest lake on the American continent, and receives the drainage of the northern half of the



RANCH ON THE PAMPAS.

Bolivian Plateau, which is an inclosed basin. At present it is about one-half the size of Lake Ontario; but in the past ages the climate was more moist and this lake occupied a much larger area. This is shown by the terraces which mark the old shore-lines. Do you

think the water is fresh or brackish? Why? What lake of our country has similar conditions and a similar history?

Compare the surface and drainage of North and South America.

#### CLIMATE.

In what zones and climatic belts does South America lie? What sections are affected by the elevation? What sections are hottest? Why? Coldest? Why? Where, in the Torrid Zone of South America, would you find perpetual winter? What part of the lowlands has a temperate climate? What part of the highlands? Notice that, unlike North America, it is narrow in the colder latitudes. What tempering influence, therefore, operates to make the southern part more mild than the same latitude in North America?

South America has an equable climate, no part being subject to the extreme heat and cold of North America. The lowlands of the Torrid belt are always hot; those of the extreme south are subject to stormy, disagreeable weather; those of the central portion are always mildly temperate. The elevated valleys of the Andes, even in the Torrid Zone, have such a delightful climate that this section is called the "Paradise of South America."

The greater part has two seasons—the wet and the dry. When the sun is north, the entire section north of the equator is subject to the equatorial rains. At this time the Llanos and the valleys of the northern tributaries of the Amazon are flooded. When the sun is

south, the south equatorial rain-belt is flooded, and the southern tributaries of the Plata are swollen to overflowing. Explain this movement of the sun.

The divides are so low that the northern affluents of the Amazon connect with the Orinoco, and the southern affluents with the Paraguay, during floods, the current moving north during one season and south during the other. The entire northern part is subject to a prevailing east wind which brings abundant moisture to nearly all parts east of the Andes. This moisture is carried across the continent until it reaches the cold summits of the Andean ridge, where it is condensed and falls as snow and rain to supply the great river sections of the Atlantic slope. The regions of greatest rainfall are directly east of the Andes, and on the northern and eastern coastal plains. The least rainfall is on the western slope from a little south of the equator to about 30° south latitude, and on the eastern slope of the southern Andes. Find these sections on the rainfall chart.

The southern half of the continent is in the region of the prevailing northwest, or "return trade," winds. They carry abundant moisture to the western slope in Chili, south of the Bolivian Plateau, while the eastern side of the Andes has little moisture. West of the plateau is the Atacama Desert, the driest place in the world. This is because the moisture is deposited by the southeast winds on the eastern slope, and this region lies out of the track of the "return trades."

Trace the ocean currents which flow near the coast of South America. Tell which are cold currents; which warm. The South Atlantic equatorial current, as it falls back in its course from keeping up with the earth's motion, seems to come from the east. It meets the barrier Cape St. Roque, is divided, a part flowing along the northeastern coast and entering the Gulf of Mexico, the other part flowing south along the eastern coast as the Brazilian Current. What direction does this current take from the eastern coast? Can you tell why? Describe the Peruvian Current. Why does it come from the southwest? Into what equatorial current does it merge? Why? How do these currents affect the climate?

Can you tell why the southern part has such a dreary, stormy climate? Suppose the Andes bordered the eastern coast, what condition would be changed? What would the great plains become? Where is the climate most healthful? Most unhealthful? How do the seasons of the temperate belt differ from ours? What one are they having now?

#### PRODUCTIONS AND OCCUPATIONS.

What constitutes good soil? Where are these conditions found in South America? Where are they absent? Name four features which influence the occupations of a country. Upon what does the vegetation chiefly depend? Why is it so luxuriant in South America? What are some of the trees and plants? Which yield medicines? Which cabinet-woods? Which food?

Which dye-woods? How is India-rubber obtained? Which plants are cultivated? How do the forests of the upper Plata basin differ from the Selvas?

Valuable products of the Selvas are cabinet- and dye-woods, caoutchouc or India-rubber, Brazil- and cocoa-nuts, cocoa beans or chocolate nuts, vanilla beans, sarsaparilla, cinchona or Peruvian bark, and ipecacuanha.

Name some of the wild animals and some of the birds which live in South America. Locate the mineral sections. Name some of the minerals. Which are precious metals? What precious stones are found in the Brazilian highlands?

Agriculture, herding, and mining are the leading occupations of South America. Agriculture is chiefly carried on in the Orinoco and the Plata basins, southeastern Brazil, and the plains of Chili;



BRANCH OF COFFEE TREE.

herding in the Llanos and Pampas, and on the uplands and mountain sides. Where is mining the chief industry? Cattle and sheep products are largely exported. What are they? As a result of agriculture all products of the hot and temperate belts are produced in abundance. By far the most important is coffee, which is extensively grown in both Venezuela and Brazil,—the latter alone producing and exporting more than all the rest of the world. Sugar, cotton, tobacco, rice, and tropical fruits are important products. The Plata basin and Chilian uplands grow wheat, corn, and other grains. In what other sections can grains be successfully grown? In the Paraguay basin Maté or Paraguay tea is extensively cultivated.

In the Torrid Zone there is no special time for sowing or harvesting, as the climate permits planting during any month, and several crops in a year.

There is little manufacturing, although it is being developed in the Plata basin.

#### PEOPLE.

The population consists of what races? Where is the continent most densely peopled? Most sparsely peopled? Why? Under what conditions would the interior become densely populated? Toward what continent may we look for settlers? Why? To what nations may we largely look? Why?

The whites are the ruling race, although comprising less than one-third of the population. They are descendants of the early Spanish and Portuguese colonists. To which Caucasian type do they belong? Those of Argentina and Chili are industrious and energetic, but those of most of the countries are lazy and idle? Why? The negroes constitute about one-tenth of the population. They are the freed descendants of slaves brought here from Africa by the Portuguese colonists. They are most numerous in Brazil, where they are engaged on the large coffee, sugar, and cotton plantations.

The natives found here by Columbus were the Indians. At that time there were probably more in South America than in North America. The tribe having the highest civilization was the Incas, in the western part. The Spaniards and Portuguese made slaves of the Indians they conquered, but they are now free. The Indians who inhabit the cities are partly civilized and inoffensive, while those of the interior are fierce and warlike. What religions are represented? The Roman Catholic predominates.

Portuguese is the official language among the whites of Brazil; but elsewhere, except in Guiana, the whites are chiefly of Spanish descent and speak the Spanish language. Name the countries of South America. The most progressive are Argentina, Chili, Peru, and Colombia. These countries have built railroads, and have introduced electric lights and trolley cars. They have systems of public schools, those of Argentina being the best in South America.

With the exception of Guiana, all have the same kind of government. What is it? How is Guiana governed? In some countries the President is elected for a term of six years; in others for a longer term; in others for life. Revolutions are frequent in these countries. Why?

Name and locate the capital of each country. Which one is directly under the equator? It has a delightful climate. Why? Name five large cities on the eastern coast. Most of the cities are built on the uplands in the western part. Why? These cities are connected with seaports by railroads. Name three cities of the western highlands. With what seaport is each connected?

*Buenos Aires* (Good Air), the largest and most progressive city of South America, is the great seaport of the Plata valley. It is about one hundred miles

from the mouth of the Plata Estuary. Its harbor has been deepened and is constantly dredged at a great expense so as to admit large steamers. It is the center of the foreign commerce of Argentina, and is connected with the chief seaports of Europe by more than twenty steamship lines.

*Rio Janeiro*, the second city of South America, has one of the finest harbors and is the largest coffee-market in the world. The city is unhealthful, because little attention is given to cleanliness and sanitation.

*Valparaiso* (Vale of Paradise), the largest and best Pacific port, is the center of commerce for Chili. It is at the foot of the mountains ninety miles from the sea, and is older than any city in our country.

#### COMMERCE.

What must South America export? What import? By what means is the domestic commerce carried on? The foreign trade is with the United States and Europe. Manufactured goods of nearly every description are imported, especially of steel and iron goods and flour from the United States, which are exchanged for coffee, fruits, rubber, hides, llama and sheep's wool. Both animal and vegetable food-products, coffee, wool, silver, and gold are sent to England and western Europe. Few railroads cross the continent. Argentina and Chili have more miles of railroad than all the other countries together. The Andes are crossed by railroads in two places. In what countries? The mineral products are carried by pack mules to the lowlands. How are the forest-products transported? How the grains and the agricultural products of the upper Plata basin? Travelers cross the Andes on mules and over the more dangerous passes in chairs strapped to the backs of Indians.

Suggest probable cargoes from the principal ports in South America to the principal ports of United States and Europe. Suggest return cargoes.

#### COUNTRIES OF SOUTH AMERICA.

What countries border the Pacific? The Atlantic? The Caribbean Sea? To what country does the isthmus belong? What countries have no seacoast? Which one has the greatest extent of seacoast? The least extent of seacoast? Which is the largest? The smallest? What countries are partially in the Orinoco basin? The Amazon basin? The Plata basin? What countries are traversed by the Andes?

#### BRAZIL.

Locate Brazil and tell what countries border it. How does it compare in size and population with our country? What reasons can you give for the difference in population? Trace the divides, and tell what part is in the Orinoco basin; in the Plata basin; in the Amazon basin. Name three affluents of the

Plata; two of the Amazon which rise in Brazil. What affluents of the Amazon do not rise in Brazil?

Describe the climate in general. The low mountain wall bordering the plateau on the southeast condenses some of the moisture carried by the southeasterly winds, leaving that part of the plateau adapted only for grazing.

What are the natural and the cultivated products of this country? What are the principal industries growing out of the natural products? In what part is each industry largely carried on? Mandioca, or manioc, is one of the characteristic plants of Brazil. From it the tapioca of commerce is obtained. Large quantities are exported. Tapioca and corn are the chief articles of food among the people. In



RIO DE JANEIRO HARBOR (ONE OF THE BEST IN THE WORLD).

the southern states of Brazil cotton goods are manufactured, the machinery being imported from the United States. In these states are iron mills, sugar refineries, tanneries, and woolen mills; but there are no extensive manufactures of any kind.

Tell what you can of the people and language. Why is the country more thickly settled in the southeast. Account for the absence of large cities along the Amazon. Locate the capital and tell for what it is noted. The products of the Selvas are exported from *Para*. What are they? *Bahia* and *Pernambuco* are seaports in the principal sugar, cotton, and tobacco region. The former is noted for its trade in diamonds, the latter as the chief sugar market in South America. From *Santos*, in the coffee state of Sao Paulo, one-third of the coffee shipped from Brazil is exported. Cattle products are exported from *Porto Alegre*.

Locate each of the above-named cities.

The *Government* is based on the federal system of the United States. The President is chosen by electoral colleges for a term of six years. What advantages or disadvantages accrue from this longer term?

## ARGENTINA.

Argentina is the most progressive country of South America and ranks first in industry and education.

In what part of South America is it located? By what countries and water is it bordered? Describe its surface and drainage. How is its climate influenced by its slope? Locate the forests, the grain and grass sections, the warm sections of sugar-cane and vineyards. Judging from its surface and climate, what are the two leading industries? What products are the result of these industries? What other industries develop from these? There are many flour mills, and wine is produced from the vine. How does the country resemble the central portion of our own country?

What can you tell of the people, the government, and the language? There are many immigrants from southern Europe, especially Italians, Spanish, and French. Agriculture is being rapidly and more highly developed.

What animal and vegetable products are exported? Wool is the most important. What must this country import?

Name and locate the capital and tell what you can about it.

*La Plata*, about forty miles south of Buenos Aires on the Estuary, is connected with it by rail. What capital city is nearly opposite.

Name the trade centers in the western uplands; one on the Parana.

Railways are being rapidly extended to promote the commerce upon which immigration depends. At present there are more miles of railroad than in any other South American country. What are some of the inducements in this country for immigration and rapid development?

## URUGUAY.

How does Uruguay compare with other South American countries? Which of the United States are of about the same size? Which are of about the same population? How is Uruguay bounded? Describe its surface, its climate.

The forests yield a large supply of timber. Wheat, Indian corn, the olive, the vine, and tobacco flourish. The rearing of cattle and sheep is the principal industry, and great herds of these and of horses feed on the vast plains. There is no great mineral wealth. There are no manufactures. The preparation of beef, and of meat extracts for export, are important industries.

The majority of the people are native-born and descendants of the early Spanish colonists; the remainder are recent immigrants from Europe, especially Great Britain. Locate the capital and largest



city. At this point the Plata Estuary is nearly seventy miles wide. There are about eight hundred miles of railroad, which, with the rivers, put the seaboard in close communication with the interior.

### PARAGUAY.

Locate this republic. Tell what countries border it. Its surface, soil, climate, and productions are similar to those of Argentina. The southern portion is swampy. Can you tell why? In what section are valuable woods? Special agricultural products are Maté or Paraguay tea, manioc, and rice. What section is adapted to the growing of rice? What products are the result of rich pastures?

Among the minerals are clays from which pottery is made.

Manufacturing is undeveloped, though there are a few flour mills, soap factories, sawmills, and tanneries.

Through what two ports is the commerce carried on? More than half the imports are from Great Britain, and consist of clothing and machinery.

Railways are being constructed and colonization is increasing. The population is sparse, and consists largely of Indians and a mixed race. Name and locate the capital.

### CHILI.

What countries and what water border this country? About how many miles is it in length? In width? How does its area compare with that of California? Describe its surface. What high mountain peak in this country?

This narrow strip of land is hilly and volcanic, but it has an abundance of moisture. It has a fine, healthful climate. Tell the changes in rainfall, climate, and vegetation from the northern to the southern part. What portion is most favorably situated? How do the seasons differ from ours? The soil is very fertile in the central part, and the products are those of the temperate and warm temperate belts. Forests cover the southern portion and the higher mountain sides. Tall and luxuriant grass covers the pastures, favoring the rearing of sheep, goats, and cattle. Grazing is of great interest. For what products? Wheat, barley, and Southern fruits are the chief agricultural products. Strawberries grow in such profusion that they are often called the "Fruit of Chili." The grapes yield a fine wine.

What minerals are found in Chili? Iron and coal are the important ones in the southern part, copper and silver in the central, and nitrate of soda in the northern part. Nitrate of soda, obtained from old lake bottoms on the dry western slopes, is the most important mineral product of the Andes. It is exported for making gunpowder and as a fertilizer. But for this deposit of nitrate and the

gold, silver, and copper of the mountains, northern Chili would not be inhabited. Why? The coal deposits are so rich that Chili exports coal to other South American countries.

There are a few manufacturing industries, and others are being developed.

The majority of the people are descendants of the Spanish colo-



RAILROAD BRIDGE BETWEEN SANTIAGO AND VALPARAISO

nists, the rest are Indians and half-breeds. The whites are a powerful race and more civilized than the other Spanish-Americans.

Education is widely diffused. Telephones, telegraph, and electric car lines are rapidly spreading throughout the country. What does this indicate in regard to the people?

The Araucanians are a celebrated Indian tribe who still preserve their freedom among their native mountains in Chili. They are proud, courageous, industrious, and are considered the most civilized of the native races of the American continent.

What is the capital? What can you say of it? What is its seaport? This seaport is built beside a steep cliff which forms a rocky crescent about the bay. It is one of the chief commercial cities of South America.

From *Iquique* the nitrates and other minerals are shipped. Why? Locate it. Name two interior cities south of *Santiago*. As this is a volcanic country, how must the height of the houses and buildings compare with those of our country?

Next to minerals, wheat and other agricultural products are the chief exports. What must be the imports? Great Britain has

most of the foreign trade. There are many miles of railroad and one river which is navigable for small steamers for nearly one hundred miles. The mountain passes are little used for transporting the products. Why?

### BOLIVIA.

This country was named for General Bolivar, the great leader in the movement, in the early part of this century, which resulted in freeing the Spanish colonies of this continent from the control of Spain.

Where is it situated? How is it bounded? Locate the highlands. Tell the direction of slope and what rivers drain it. How must the great elevation affect its climate and productions?

The majority of the civilized population are Indians, and there are large numbers of uncivilized Indians. Why is it so sparsely settled? The mineral and agricultural resources have been unde-



STATUE OF BOLIVAR, LIMA, PERU.

veloped until recent years, owing to lack of means for transportation. The great forests are a continuation of those of Brazil. What products do they yield? The Bolivian rubber is of the finest quality. Coffee, sugar, and cocoa are valuable products. Name the minerals found here. This cold and rugged plateau would doubtless be nearly uninhabited but for the great number of rich gold and silver mines. Around these mines, at a great elevation, people have congregated and founded cities. *Potosi*, the highest city in the world, lies at the foot of a mountain famed for its rich silver mines since the days of the Spanish conquerors. Two-thirds of the exports

consist of silver, others are copper and tin, coffee, and forest products. What must be some of the imports? Trade is chiefly with Great Britain. Railroads connect the broad tablelands with the seaports of Peru and Chili. Most of the exports are sent to Europe by way of Buenos Aires. It is probable that by means of the affluents of the Parana and the small steamers, Bolivia will soon have direct communication with the Atlantic coast.

Locate Sucre, the capital; La Paz, the largest city; Cochabamba; Potosi.

## PERU.

Locate this country. By what is it bordered? Describe surface and drainage.

The surface consists of three sections.

The *rainless coast strip* is fertilized here and there by the swift rivers of the western slope, which afford means of irrigation for cotton and sugar plantations worked by Chinese Coolies. These products form the chief exports.

The *Sierra* consists of the valleys and tablelands between the two principal Andean ranges. On one of these plateaus, partially in Bolivia, Lake Titicaca lies. How high is it above the sea-level? At this great height even barley seldom ripens. The only food-grain is from a native plant called Quinoa, which is wholly unlike our cereals.

*Montana* is the region on the eastern Andean slope, forming two-thirds of the area of the country and containing the source of the Amazon. In this region and in the valley of the Sierra the soil is very fertile.

The *climate* varies with the elevation, from tropical heat to perpetual snow. The eastern slope is for the most part covered with dense forests, a continuation of the Selvas, which yield a rich supply of rubber and Peruvian bark. The agricultural products vary from the coffee, rice, sugar, and cotton of the tropical sections to the fruits, cereals, and vegetables of colder belts. The potato is the principal food in many sections. Goats, Peruvian sheep, and llamas are quite extensively raised, and the wool is exported.

Peru is famous for its wealth of minerals. Name some of them. The silver mines which caused the building of the city of *Pasco* on the highlands in the central part are among the most celebrated in the world.

Rich petroleum fields are being worked in the northern part near *Paita*. Locate it.

On the islands which border the coasts, in the rainless region, rich deposits of guano have been made by the birds which inhabit them. It is a valuable export as a fertilizer.

There are no manufactures.

The population is about equally divided between the Spanish descendants and the pure Indians. What must be their occupation?

When the Spaniards came, Peru was inhabited by the Indians, who had constructed highways, suspension bridges, aqueducts, and fine buildings of stone. They worked in bronze and metals, and in every way gave evidence of the highest civilization on the American continent. They built cities and had a strong government under a ruler. They were conquered and enslaved by the Spanish.



GENERAL VIEW OF LIMA AND CATHEDRAL.

*Lima*, the capital and largest city, is on an eminence a few miles from the coast. It is connected with the principal seaport and with the mining city of Pasco by railway. Name this seaport. Which of our cities is of about the same size as Lima?

Locate *Arequipa*. Here, about 8000 feet above the sea-level, Harvard University has established an astronomical observatory.

*Cuzco* was the capital of the Incas. Locate this town.

Trade is mainly with Great Britain. Name some of the imports. Peru has two of the most wonderfully constructed railroads in the world, one crossing the Andes, the other reaching the tablelands. What are some of the engineering difficulties in constructing such railroads? Many other railroads are proposed in other directions which will open up the rich natural resources.

## ECUADOR.

The name Ecuador is the Spanish for equator. Where is this country situated? By what countries and water is it surrounded? What arm of the sea indents the coast? Tell what you can of its surface. Earthquakes are frequent. Name two volcanoes. Where would you find perpetual snow?

This country is of no importance commercially. The majority of the people are Indians, many of them being only half civilized.



NATIVE VILLAGE ON PANAMA RAILROAD, COLOMBIA.

Cacao is grown on the western slope and is the principal export from the only seaport. Name and locate this seaport.

*Quito*, The City above the Clouds, lies on a tableland between two Andean ranges. What is its latitude? A railroad is being constructed to connect it with Guayaquil.

The *Galapagos Islands* belong to Ecuador. How were they formed?

## COLOMBIA.

Locate the republic of Colombia; give its boundaries. What gulf and what bay on the coast?

Describe its surface and drainage. Its climate. How are the climate and productions varied by the elevation? It is the most important of the northern republics because it commands the commerce of two oceans.

The soil is fertile, but only a small portion of it is under cultivation. Agriculture is the chief industry. Coffee, tobacco, fruits, grains, and indigo are extensively grown. Rice is the chief article of food and is an important import. From what countries?

Mahogany, cedar, dyewoods, and medicinal plants are abundantly supplied by the forests. Gold, silver, and precious stones are leading exports, although the mineral wealth is not developed.

*Bogota* is delightfully situated on the uplands. Through the affluents of the Magdalena and Orinoco it has access to the sea. It is on the chief commercial route from Quito to the Caribbean.

*Cartagena*, on the Caribbean, and *Panama*, on the Pacific, are the chief seaports.

The Panama Railway, from Colon to Panama, and the proposed Panama Canal, belong to this country.

Because of the mountainous nature of the country and the lack of good roads, trade with the interior is difficult and expensive, and there is no incentive to the development of the natural resources. All goods have to be transported by pack mules, after leaving the great natural highway, the Magdalena River. There are few railroads. Education is receiving considerable attention. Tell five ways in which Colombia, Ecuador, and Bolivia resemble each other?

### VENEZUELA ("LITTLE VENICE.")

This country was so named by Amerigo Vespucci, the next year after Columbus discovered it, because the natives had built their houses on piles and in trees to prevent inundation.

Where is it situated? By what countries and waters is it bordered? What body of water indents the coast? What island lies near the coast? To whom does it belong? What product does it supply? To what basin does the greater part of Venezuela belong? What mountain ranges border this basin? What is the general slope? What name is given the lowlands of this basin?

Tell what you can of its vegetation and climate. How do the climate and vegetation of the uplands and slopes differ from those of the Llanos. More than half the area is covered with forests of valuable woods and one-third is pasturage, but the wealth of the country depends on agriculture. Coffee is the staple product and chief export; cocoa is next in importance as an export.

Venezuela is rich in minerals, which have been but little mined. Gold in the eastern and copper in the western parts are the most important.

The people are mostly of Spanish, Indian, and Negro descent, and live in the valleys of the highlands.

Name and locate the capital. It is on an elevation three thousand feet above the sea-level and twelve miles from its seaport, *La Guaira*, to which it is connected by a railroad. It is the chief cocoa market. It is subject to earthquakes. What kind of buildings would you expect to find? Why? General Bolivar was born here. Locate *Valencia*. With what port is it connected? Locate *Mara-caibo*. Near this seaport are rich asphalt and petroleum fields.

### GUIANA.

Where is this country situated? How is it bounded? Tell what you can of the surface and drainage. The coastal plain has a heavy rainfall, and much



of it is swampy. Why? What three provinces or colonies occupy this country? Which one is farthest east? Farthest west? Name the capital and largest town of each. All are seaports and trade centers.

The cultivation of plantation products, chiefly sugar-cane, and the mining of gold, are the principal industries of British and Dutch Guiana. The laborers are negroes, mulattoes, and coolies. There are few whites. Sugar, gold, spices, and forest products are exported.

There are few industries and little trade in French Guiana. It is used by the French as a place of banishment for convicts.

## ASIA.

The term Asia is supposed to have been originally applied only to Asia Minor.

### LOCATION.

Locate Asia on the globe. Tell what large bodies of land and water surround it. Point to it and tell how you would reach it in traveling. What is its direction from each of the other continents? Imagine yourself in Asia and tell the direction of each of the other continents from yourself. Where does it approach nearest to each of the continents?

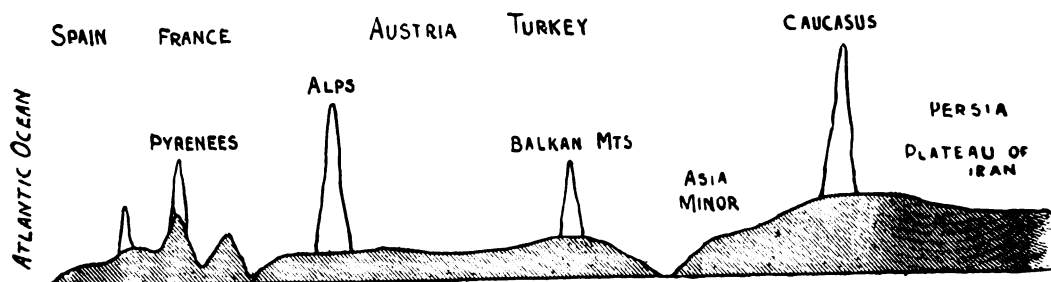
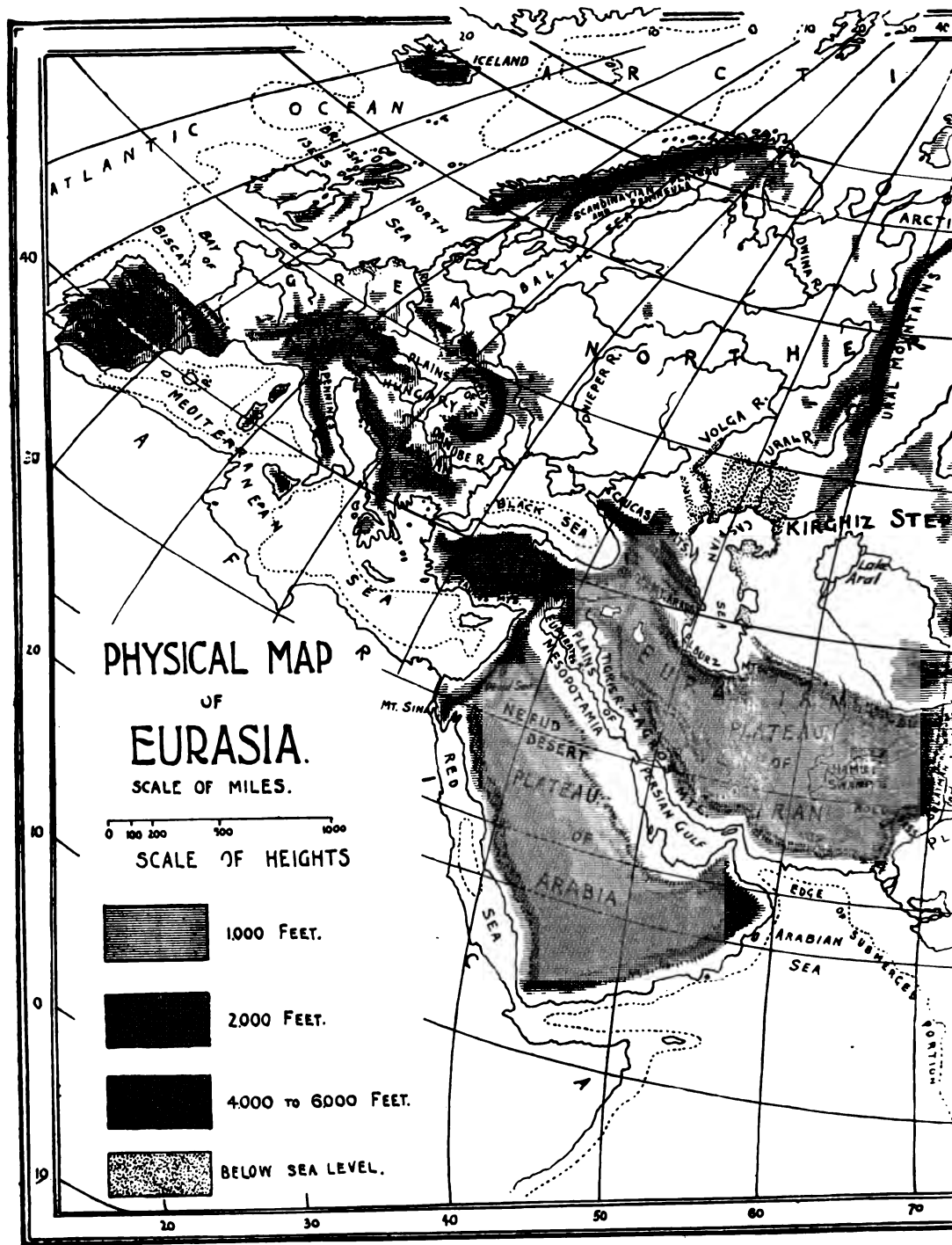
Between what parallels of latitude does it extend? What other continents lie wholly within these parallels? What ones lie partly within them? Between what meridians of longitude does it lie?

About how many miles is the greatest width of this continent? The greatest length? How does it compare with other continents in size? In importance? What is its area? It covers about one-twelfth of the earth's surface or about one-third of the land surface of the globe. About how many times the size of North America is it? How many times Europe?

What two continental peninsulas project from the western part? Where is each connected with Asia? What seas and straits separate each from Asia? What separates North America from Asia?

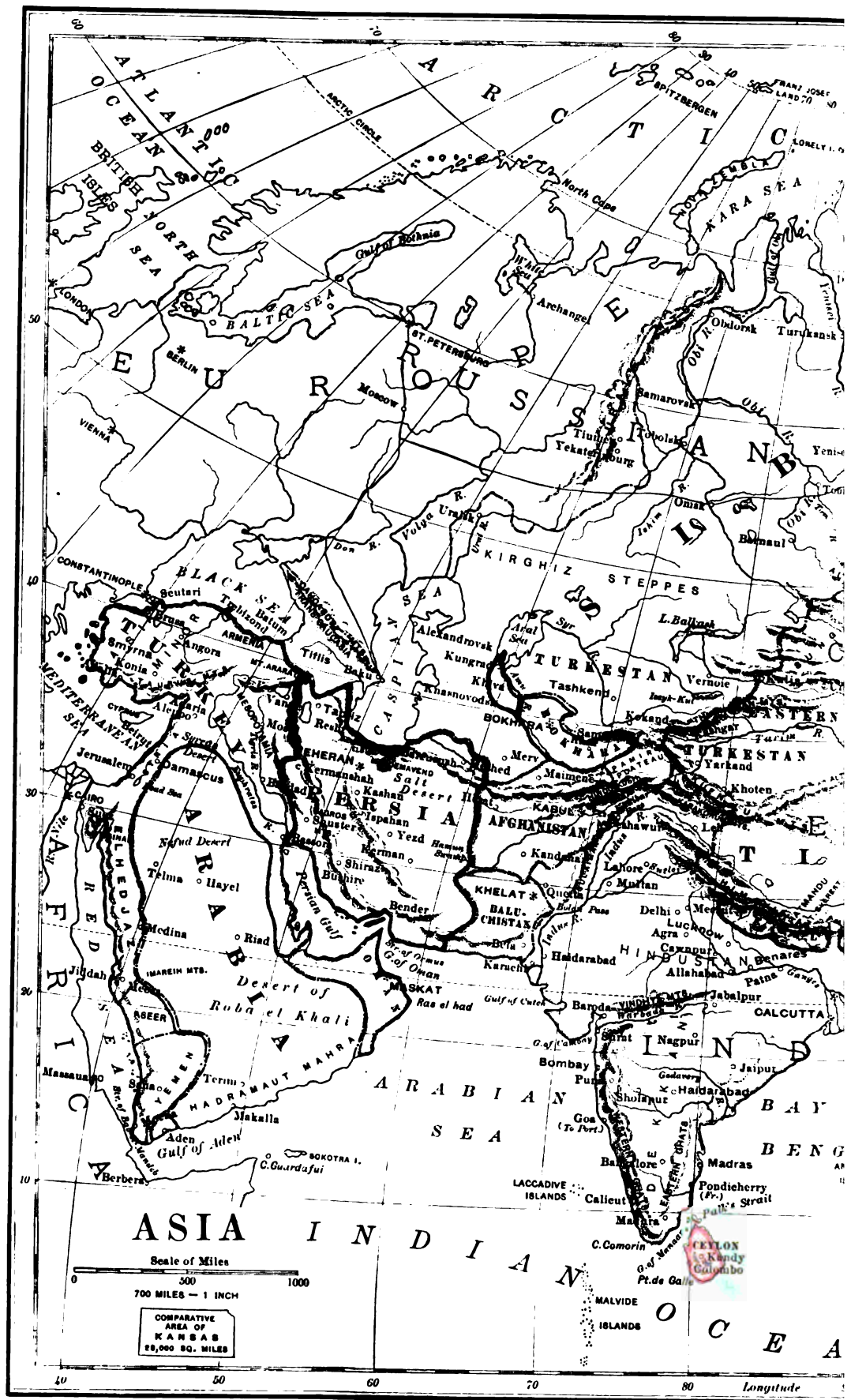
What reasons can you give for the great irregularity of coast? Name a sea and a gulf on the northern coast; six seas and a gulf on the eastern coast; one strait, a large bay, and a sea on the southern coast. What gulf and what sea are arms of the Arabian Sea? Both occupy narrow depressions between highlands. What two peninsulas on the eastern coast? What waters nearly surround each? Describe three large peninsulas of southern Asia. What smaller one projects from the peninsula of Indo-China? Describe its outline and form. By what isthmus is it connected with Indo-China? Compare the three southern peninsulas of Asia with those of Europe in all the ways you can. What cape projects from the southern point of India? Of the Malay Peninsula? Of Indo-China? Of Kamchatka? Name the most northern cape. The most northeastern. The most southern. In what latitude and in what direction from Asia is Franz Josef Land? From this island, explorers are trying to reach the North Pole. What island group and what single island lie north of Asia? What island empire lies east of the mainland? It consists of a curved chain of mountainous and volcanic islands extending from Kamchatka to Formosa. What seas do they inclose? They were probably once a portion of the mainland, and were cut off by the settling and submergence of the low plains which are now occupied by these shallow, inclosed seas. The entire highland and neighboring islands are still volcanic.

It is believed that the eastern, northern, and central portions of Asia are again undergoing an uplift; which fact may account for the much drier climate and the western migrations of the ancient people.









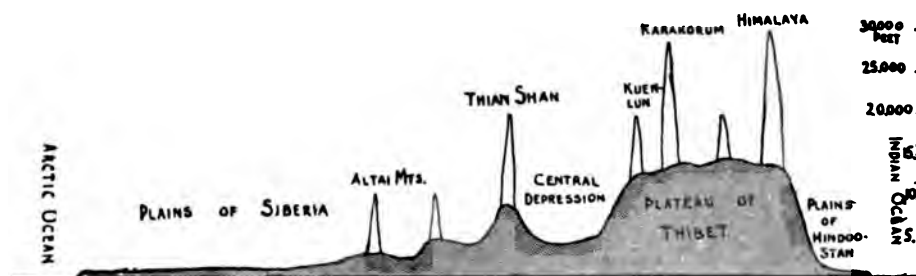


Name the two largest islands of the Japanese Empire. What long island belonging to the mainland lies wholly within the inclosed basin? How was it formed? How is it separated from Yesso? What strait separates Korea from Hondo?

How is Formosa separated from the mainland? What coast island in the South China Sea? In what direction from the mainland are the Philippine Islands? To whom do they belong? These with Borneo, Sumatra, Java, Celebes, and the smaller islands southeast of Asia are called the East Indies. What island southeast of India? Name two island groups west of Indo-China; two southwest of India.

#### SURFACE.

In modeling Asia or Eurasia teacher and pupils will find it easier to model from the Pamir outward to the coast. Note how the highlands shape the continent.



CROSS SECTION OF ASIA, NORTH AND SOUTH.

Asia contains the highest and lowest land of the world. In what part are most of the highlands? In what general direction do they extend? From what Asiatic peninsular plateau are they continued into Europe? Across what one are they continued into Africa? What is the general direction of the long continental slope? Of what does the greater part of the slope consist?

What low mountain range partially divides the great plain of Eurasia? What lakes lie in a great depression in this plain? Where is the plain widest? Where narrowest? Locate the Pamir Plateau. What two plateaus and what desert lie east of Pamir? Together, these plateaus form the highest land mass in the world. What can you say of its age compared with other highlands of the world? What mountains on the southern and northern borders of the Plateau of Tibet? What range lies between these two? What mountain spur do the Kuenluns send to the northeast? What three ranges on the northern border of the central basin and Mongolian Plateau? What one on its eastern border? On its southern border? By what name are the Khinghans continued to Bering Strait? What plain lies east of the Khinghans? What one southeast? Both of these alluvial plains are formed from the mountain waste which the great rivers deposit. Both give evidence of recent uplift. What river gaps the Khinghans? Describe its course. It is navigable for over 2000 miles, and is the great thoroughfare of Asiatic Russia.

What two rivers cross the Plains of China? Describe each. Both are fed by the perpetually snow-capped mountains and are building out rapidly into the sea, many former seaports being now far inland. What other rivers of the world are doing the same?

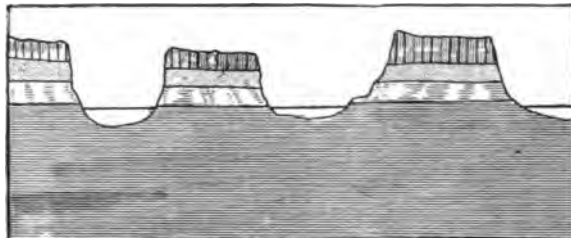


*The Hoang Ho*, Yellow River, or "China's Sorrow," has few tributaries, is rapid, shallow, and hardly navigable. After leaving the high plateau it descends rapidly and with great erosive force to the flat lands of the plain, where, owing to the change of grade, it rapidly silts up its channel, and builds its bed and banks higher than its flood-plains. The banks have been strengthened by levees; but the river is subject to floods in the spring, often breaking its banks and causing great loss of life. From a single break in 1887 over one million people were drowned. During these inundations it frequently changes its lower course, thus working further disaster. How? Its mouth was formerly in the Yellow Sea.



LOESS PLATEAU OF THE HOANG RIVER.

When the waters subside the flood plains are buried in a fine yellow soil. Above the flood-plains and below the plateau the river flows through a vast area covered with this yellow soil, varying in depth from a few feet to a thousand feet, called *loess*. This deposit was made by the winds as fine dust from the plateaus, and by former streams, which completely buried hills and valleys, forming a loess plateau. Streams have now dissected the plateau in all directions, forming deep canyons, and are carrying the soil to build the lowlands. The soil of this loess country is fertile and productive when



DOWN-CUTTING OF RIVERS IN A LAVA PLATEAU.

there is sufficient rainfall; but in seasons of drought terrible famines occur. It is inhabited by a large population who live in caves carved in the plateau. These cave-dwellings are comfortable, being warm in winter and cool in summer.

*The Yangtse* has many affluents, has cut a deeper channel, and has numerous small lakes in its flood-plain which receive the overflow and prevent disasters. How does it enter the sea? It is navigable for large vessels for over a thousand miles and with its tributaries affords a waterway of nearly 12,000 miles.

The waters of Chinese rivers are crowded with junks and vessels

inhabited by vast numbers of people who have no other dwelling-places.

What two plateaus lie west of Pamir? What two mountain ranges border the Plateau of Iran on the north? What one on the east? What one on the southwest? What mountains border Asia Minor on the south? What peninsular plateau southwest of Iran? Southeast of Iran? Dekkan is a lava plateau formed by the filling up of former valleys with the overflowing lava from the volcanoes of the bordering mountains. The lava becomes so hard that erosion is slow. Name the border mountains.

What sea occupies the depression between Arabia and the highlands of Africa? It was of little commercial importance before the cutting of the Suez Canal, which connects it with the Mediterranean. What lowland between Iran and Dekkan? What is its extent? Locate Mt. Everest, Mt. Ararat. Both are volcanic cones. About how many miles in height is Everest? How does it compare with other peaks of the world?

The highlands of the world reach their highest elevation in the *Pamir Plateau*, the "Roof of the World." It is more than 16,000 feet above sea-level, with mountain peaks several thousand feet higher. From this plateau three mountain ranges spread out to inclose the great plateaus on the east.



HIMALAYAS. DISTANT VIEW.

The Himalaya and the Kuenlun mountains partially inclose Tibet, a plateau 15,000 feet above the sea-level. The Karakoran range traverses this plateau and forms a partial divide between the northern and southern parts. The greater part of Tibet is cold, arid, and barren; the valleys are filled with the wash from the streams which flow down the inner sides of the snow-capped mountains.

There are many undrained marshes and salt lakes. Why are they salt? Several of the lakes are the highest in the world. The northern or inner part of the plateau is little more than a desert. On the southern part, directly north of the Himalayas, the two great rivers, Indus and Brahmaputra, have their sources amid perpetually snow-clad peaks. Both have cut deep valleys in the plateau and transverse valleys across the great mountain wall, and both are building enormous deltas with the mountain waste. There is little vegetation except the coarse grass and hardy shrubs which border the streams. At this great altitude the air is so rarefied that few animals or people can exist. The more fertile portions near the outer part are sparsely inhabited by people who depend upon a kind of ox, the yak, for food and as a beast of burden.

*The Himalayas* consist of several parallel ranges, the outer being the highest, and youngest. This is the loftiest mountain chain in the world, having nearly fifty peaks, occurring in groups, rising about 23,000 feet, while the lowest passes are higher than the summit of Mt. Blanc. This chain has an abrupt descent to the Plains of India,



HIMALAYAS. NEAR VIEW.

which makes the ascent almost impossible for man or beast. It has the largest glaciers in the world. How do these affect the rivers? From the Pamir, this great mountain wall, which separates both the vegetation and the people of the continent, extends in a southeastward curve to Meridian 95, where it is joined by spurs from the Kuenlun Mountains, and together they spread out into many lower ranges, some extending southward forming the Indo-China and Malay Peninsulas, others continuing to the eastern coast. The Kuenluns reach an elevation of 20,000 feet in their highest peaks. A spur forms the southern border of the Mongolian Plateau and several

ranges turn southward ; others continue eastward, extending parallel with the Himalayas to the coast. What names are given the two ranges in the southeast?

From the Pamir, the *Thian Shan*, "Heaven Mountains" extend northeastward to the Altai Highland, which extends into the Yablonoi. These three ranges, with the Khinghan and Kuenlun Mountains, inclose the central basin and the Mongolian Plateau. This central depression, which is the bottom of a former interior lake of great extent, is from 3000 to 4000 feet above sea-level, sinking much lower in the marshy, salt lake-basin of Lob Nor.

There is no outlet to the greater part of this plateau, and the many streams which issue from the mountains are soon lost in the



TRAVELING IN THE HIMALAYAS.

dry soil. This soil is the waste from the surrounding mountains, and is drifted here and there by the shifting winds. The people live on the borders of this region near the mountains. The Gobi Desert extends east and west across the central part, and is more barren in the west than toward the east, which is opened by a tributary of the great River Amur.

The eastern half of the Northern Lowland in Asia consists of a low plateau extending to the sea. Many low mountain spurs traverse this plateau and form divides between the numerous rivers which dissect it. How many rivers belong to the Arctic Basin? Describe the three largest. Which one drains a large lake in its course? What name is given the Obi estuary? These great rivers and their large tributaries form an almost unbroken waterway through Siberia during the summer. How is the southwestern part of the Siberian Plain drained? In the Aral-Caspian basin, the fertile soil lies on the higher part of the slopes and consists of the silt deposited by the streams.

Extending westward from the Pamir are the Hindu Kush Moun-

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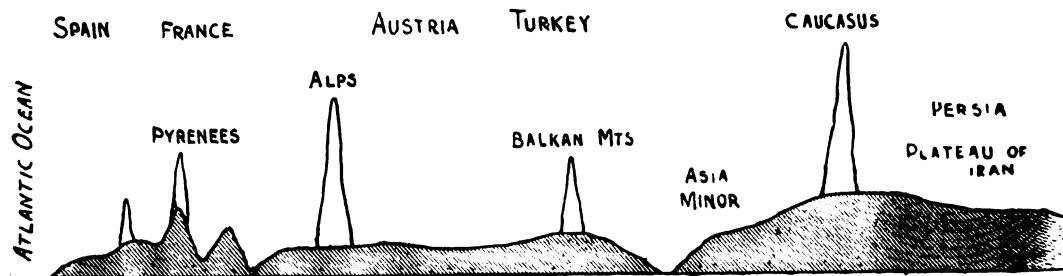
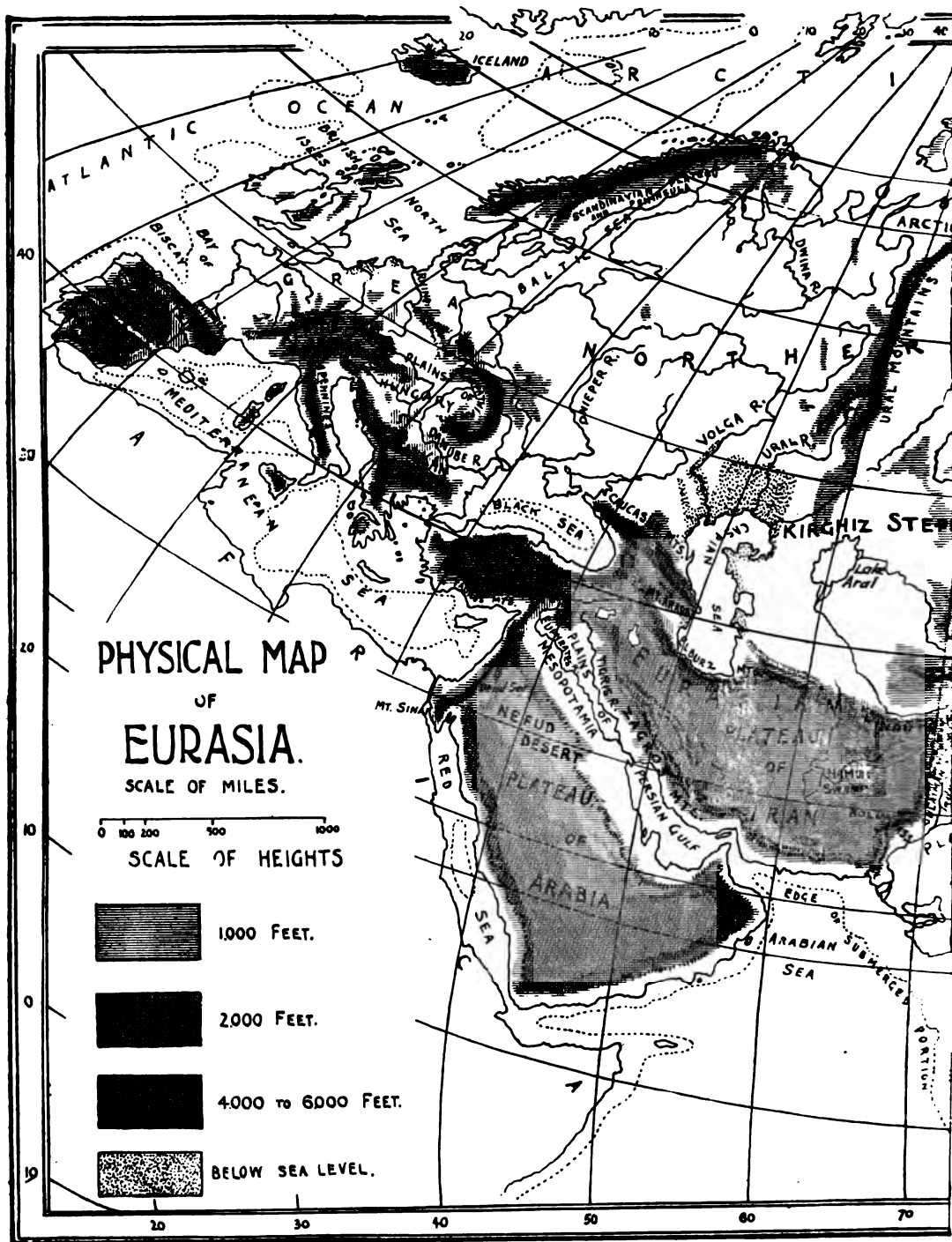
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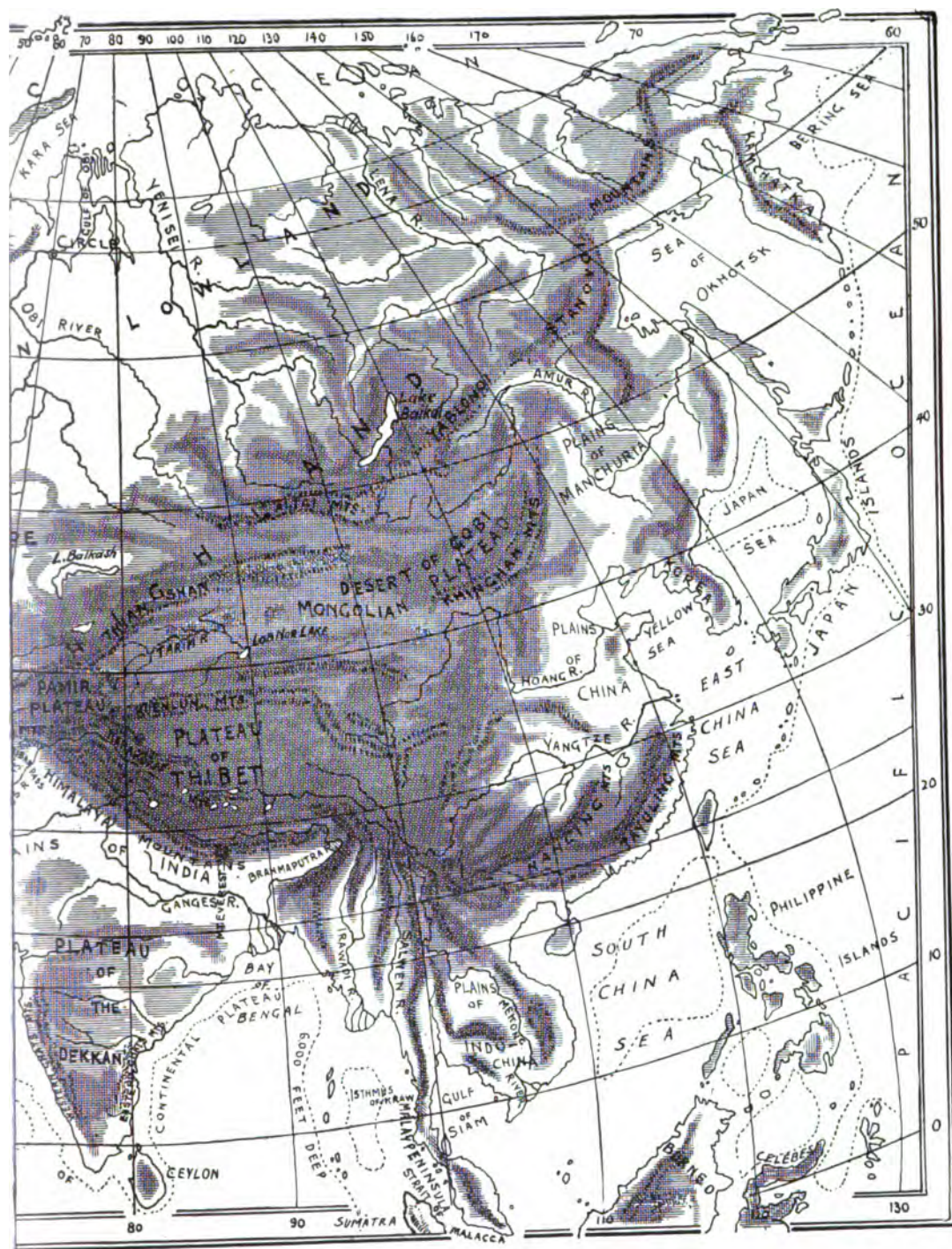
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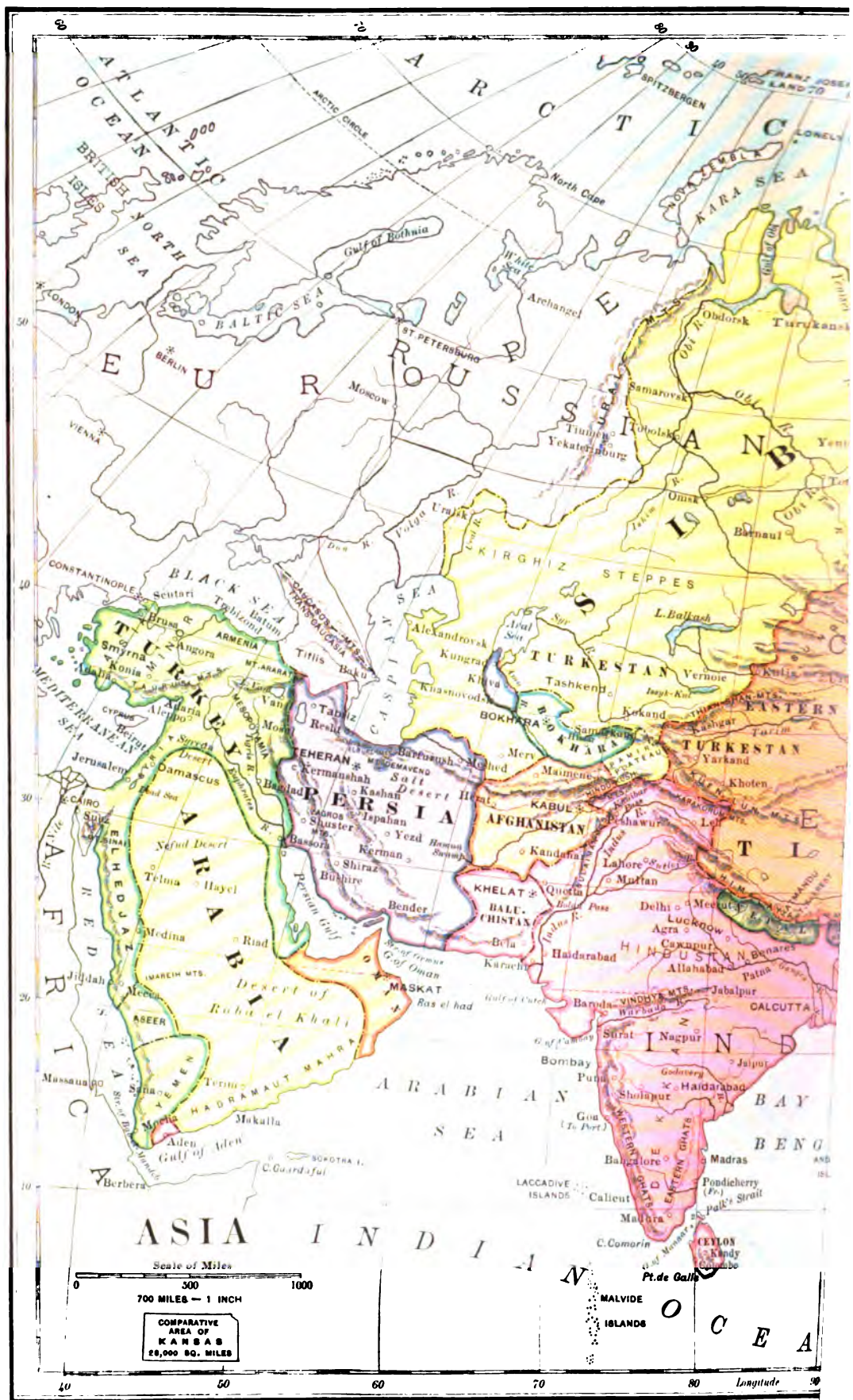
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ucts are the magnificent Japanese cedar, the camphor and lacquer trees, and the bamboo, one variety growing sixty feet in height. Rice is grown in the low-lying districts, wheat, millet, barley, and tea on the higher slopes. Silk culture is extensive. Next to China, Japan produces the most silk of any country in the world. Oranges and persimmons are the only good fruits. There is little



VOLCANO FUJIYAMA.

live-stock, and Japan had, until very recently, no milk, butter, or cheese, no native wool, and only a small supply of leather.

Japan is rich in coal and iron, although they are not near each other. Copper and antimony are exported. Kaolin furnishes the raw-material for Japanese porcelain.

Fish are plentiful in the rivers and on the coast.

Agriculture is the leading occupation, though the soil is not naturally very fertile. The Japanese thoroughly understand the rotation of crops.

The Japanese have always shown great skill in fine, artistic handiwork. Their embroideries, silks, cloths, carvings, lacquer ware, inlaid metal work, paintings, and pottery being among the finest in the world. In recent years machinery has been introduced and factories have been established.

#### PEOPLE AND COMMERCE.

The Japanese are patient, cleanly, polite, industrious, imitative. To what race do they belong? Buddhism is the prevailing *religion*, although there are many Shintos. Find out what you can about

Shintoism. *Education* is general and compulsory. There is a complete system of local elementary, secondary, and normal schools with a university in the capital. Daily newspapers abound. There are nearly three thousand miles of railroad, and more in construction.



NATIVE CARRIAGE. JAPAN

Japan has a limited monarchy similar to that of Great Britain. The ruler is called an emperor.

Name and locate the capital ; the principal seaport. Locate *Kyoto*, *Osaka*, *Hakodate*, *Nagasaki*. *Kyoto* and *Osaka* are important manufacturing and trade centers. *Hakodate*, the treaty port on *Yesso*, has a small foreign trade. The climate of *Yesso* is severe, and much of the surface unfit for cultivation, hence there is a sparse population on the coast engaged in salmon, cod, and herring fishing. *Nagasaki* has a large export of coal.

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## THE CHINESE EMPIRE.

Where is this empire located ? What countries and what waters border it ? How does it compare in area with other countries of the world ? How does it compare in importance ? About how many miles long is its coast ? Name and locate two gulfs. Name two islands near the coast. To whom do they belong ? Tell what you can of the surface by describing the plateaus, the mountains, and the plains.

inhabited by vast numbers of people who have no other dwelling-places.

What two plateaus lie west of Pamir? What two mountain ranges border the Plateau of Iran on the north? What one on the east? What one on the southwest? What mountains border Asia Minor on the south? What peninsular plateau southwest of Iran? Southeast of Iran? Dekkan is a lava plateau formed by the filling up of former valleys with the overflowing lava from the volcanoes of the bordering mountains. The lava becomes so hard that erosion is slow. Name the border mountains.

What sea occupies the depression between Arabia and the highlands of Africa? It was of little commercial importance before the cutting of the Suez Canal, which connects it with the Mediterranean. What lowland between Iran and Dekkan? What is its extent? Locate Mt. Everest, Mt. Ararat. Both are volcanic cones. About how many miles in height is Everest? How does it compare with other peaks of the world?

The highlands of the world reach their highest elevation in the *Pamir Plateau*, the "Roof of the World." It is more than 16,000 feet above sea-level, with mountain peaks several thousand feet higher. From this plateau three mountain ranges spread out to inclose the great plateaus on the east.



HIMALAYAS. DISTANT VIEW.

The Himalaya and the Kuenlun mountains partially inclose Tibet, a plateau 15,000 feet above the sea-level. The Karakoran range traverses this plateau and forms a partial divide between the northern and southern parts. The greater part of Tibet is cold, arid, and barren; the valleys are filled with the wash from the streams which flow down the inner sides of the snow-capped mountains.



There are many undrained marshes and salt lakes. Why are they salt? Several of the lakes are the highest in the world. The northern or inner part of the plateau is little more than a desert. On the southern part, directly north of the Himalayas, the two great rivers, Indus and Brahmaputra, have their sources amid perpetually snow-clad peaks. Both have cut deep valleys in the plateau and transverse valleys across the great mountain wall, and both are building enormous deltas with the mountain waste. There is little vegetation except the coarse grass and hardy shrubs which border the streams. At this great altitude the air is so rarefied that few animals or people can exist. The more fertile portions near the outer part are sparsely inhabited by people who depend upon a kind of ox, the yak, for food and as a beast of burden.

*The Himalayas* consist of several parallel ranges, the outer being the highest, and youngest. This is the loftiest mountain chain in the world, having nearly fifty peaks, occurring in groups, rising about 23,000 feet, while the lowest passes are higher than the summit of Mt. Blanc. This chain has an abrupt descent to the Plains of India,



HIMALAYAS. NEAR VIEW.

which makes the ascent almost impossible for man or beast. It has the largest glaciers in the world. How do these affect the rivers? From the Pamir, this great mountain wall, which separates both the vegetation and the people of the continent, extends in a southeastward curve to Meridian 95, where it is joined by spurs from the Kuenlun Mountains, and together they spread out into many lower ranges, some extending southward forming the Indo-China and Malay Peninsulas, others continuing to the eastern coast. The Kuenluns reach an elevation of 20,000 feet in their highest peaks. A spur forms the southern border of the Mongolian Plateau and several

ranges turn southward ; others continue eastward, extending parallel with the Himalayas to the coast. What names are given the two ranges in the southeast?

From the Pamir, the *Thian Shan*, "Heaven Mountains" extend northeastward to the Altai Highland, which extends into the Yablonoi. These three ranges, with the Khinghan and Kuenlun Mountains, inclose the central basin and the Mongolian Plateau. This central depression, which is the bottom of a former interior lake of great extent, is from 3000 to 4000 feet above sea-level, sinking much lower in the marshy, salt lake-basin of Lob Nor.

There is no outlet to the greater part of this plateau, and the many streams which issue from the mountains are soon lost in the



TRAVELING IN THE HIMALAYAS.

dry soil. This soil is the waste from the surrounding mountains, and is drifted here and there by the shifting winds. The people live on the borders of this region near the mountains. The Gobi Desert extends east and west across the central part, and is more barren in the west than toward the east, which is opened by a tributary of the great River Amur.

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change in slope prevents it from carrying its detritus to the sea; hence the delta and many sand-bars and shallows. How does this affect its navigation?

#### CLIMATE.

In what belts does Asia lie? How are the heat of the south and the cold of the north increased? What winds prevail? How are the northeast winds of Siberia deflected by the mountains? What effect have they upon the Aral-Caspian region? What effect have the highlands on the southwest winds? What continent deprives Arabia and Iran of the moisture borne by the southwest winds? What ocean current modifies the easterly winds?

What islands and mountain range take much of the moisture carried by these winds, thus partly causing Gobi? The southern part of Asia has constant monsoons. Explain them. At what season does the northeast monsoon prevail? The southwest monsoon?

In the shifting from one to the other, between May and November, the terrible typhoons of the Indian Ocean occur. As a whole, the continent has a dry climate because of the high mountains on the seaward side and the great land masses which absorb the moisture that passes over them. Some parts are so high that the last particle of moisture is taken from the winds which blow against the cold summits. On the inner plateaus it is so dry that flesh will not putrefy, but crumbles into dust. What effect would this dryness have on finer vegetation? The rainfall is much less than formerly.

What evidence have we of this fact? Where are the regions of least rainfall? Of greatest rainfall? Of moderate rainfall? How is the vegetation affected by each? How is the climate in the northern half affected by the variation in the length of day and night?

#### PRODUCTIONS AND OCCUPATIONS.

Where is the principal vegetation of the high plateaus? Of what does it consist? Why do no trees grow on them? Locate the Tundras. Find the region of shrubs and stunted trees.

Trace the boundary of the great forest belt. Name the evergreens and deciduous trees which grow in it. Which grow farthest north? Farthest south? Locate the Steppes (prairies); other grass sections; the grain and the fruit sections. What grains grow farthest north? Where else will these hardy grains grow? Where are cotton, sugar, rice, and coffee grown?

On the southern slope of the Himalayas the vegetation varies, from the mosses and lichens just below the snow-line to the wheat and tea of the lower valleys, which are largely exported, and the sugar, cotton, and rice of the plains. Between the grain and sugar sections at the foot of the mountains is a belt of marshes covered with luxuriant vegetation and known as the jungles. Here are dense forests interspersed with wide open spaces of huge, waving grass growing from five to seven feet in height. They are the favorite haunts of tigers and other wild animals.

All of the snow-capped mountains have heavy forest belts. Why? On which do they extend nearest the base? In what sections do palms grow (p. 70)? Which varieties flourish? Make a list of each of the following plants of Asia: fruits, food, dye, medicinal, and flowering plants, cabinet-woods. Tell in what sections they grow. From which part of the plant is the valuable product



OPIUM POPPY.



TEA-PLANT.

obtained—the root, bark, stem, blossom, fruit, or seed? Why are the higher slopes of the Aral-Caspian basin adapted for growing melons?

What animals do you find in the northern belt (p. 72)? How has Nature protected them from the cold? Why does this make them valuable to man? The northern rivers abound in fish. What industries are promoted? Name the principal animals of each belt. Which are domesticated? In what sections are the very large animals?

In what section is the reindeer valuable? Why? The camel? Why? The yak? The elephant is used as a beast of burden in the southern part. Bring in pictures of the animals and the birds of Asia. What birds do you find in each section? Which have beautiful plumage? What ones live in the cold sections? Why can they live on the Arctic coast and not on the plateaus? All of our useful animals were domesticated in Asia.

Asia is rich in minerals, but owing to the superstition of the people and the antiquated means employed, the mines are poorly developed. The Russians have found rich mines of gold, platinum, and precious stones in Siberia, and fossil ivory in the extreme north. The mines of Japan are worked more intelligently than those of China. Valuable coal mines are located in China. Name the minerals of Asia; the building stones; locate the petroleum fields, rock-salt beds. Make a list of the precious stones. From India, diamonds are obtained; from Persia, turquoise; from Burma, sapphires; from the Malay Peninsula, tin; all of excellent quality.

The principal occupations are agriculture and stock-raising. In the north the people live by hunting and fishing. In the south-western part, irrigation is necessary for agricultural products, and stock-raising is the chief occupation of the men. The women weave, by hand, fine silk and cotton fabrics, carpets, shawls, and rugs of great beauty and durability. Herding is the principal industry on the plateaus, the soil being cultivated only in the river valleys. In China, Japan, and portions of India, parts of the land are so well cultivated, with ancient and laborious methods and implements, that it is made to produce three or four times as much as the same amount in America.

There are few manufactures in the northern part, and the needs of the people are easily supplied. The manufactured articles are supplied by Russia. Cattle products and furs are exported. Manufacturing largely engages the Japanese, some of the Chinese, and the people of India.

#### PEOPLE.

What races live in Asia? Tell their principal characteristics. Where is the population most dense? Least dense? Why? What religions are represented? In what part are many Orthodox-Greeks? Mohammedans? Locate the others. What forms of government are represented?

With the exception of the Turks and Slavs the great mountain wall extending from the Ægean Sea to Indo-China separates the Caucasian group from the Mongolic. The people of India, Afghanistan, Baluchistan, Persia, Arabia, and most of Asiatic Turkey are of Aryan descent. For many years European Russia has sent convicts and political suspects to colonize the Siberian plains; but the towns are far apart and thinly settled. The people of the plateaus are nomadic and half-civilized. Why? On the fertile plains in the south and east the population is so dense that many of the inhabitants find difficulty in obtaining sufficient food to support life. These are the most densely peopled sections of the globe, India alone having about one-sixth of the earth's population. The whole continent is backward in civilization; steam and machinery are but little known. Women are uneducated and little better than slaves. A few Europeans who reside in Asia are responsible for all advancement among the natives. The Japanese are the most progressive of Asiatic nations. No other nation has made sufficient progress for a limited monarchical government. India belongs to Great Britain.

Name the countries which border the Pacific coast; the Indian Ocean; Europe. What country lies farthest north? South? East? West? Which is the largest? The smallest? Which has no seacoast? Which are bordered by the Caspian Lake? By the Persian Gulf?

What countries occupy Indo-China? The Arabian Plateau? Iran? To what oceanic basins do the rivers belong? Which slope has the most rivers? Which the fewest? How do the number and size of Asiatic rivers and the

drainage compare with those of North America? Of Europe? Of South America? What causes this difference in Asia?

Locate Irkutsk, Vladivostok, Port Arthur, Yokohama, Shanghai, Canton, Hongkong, Singapore, Calcutta, Madras, Bombay, Aden, Smyrna. Which are not seaports?

#### COMMERCE.

There is a brisk trade between different sections of Asia, although transportation is difficult. Except in India and China, there are few roads. Caravans of camels are the chief means of travel and of transporting goods in the interior; yaks, donkeys, and even goats, are used in the high mountain passes; the reindeer and dogs, in the north; elephants, in some parts of the south; and horses, in several sections. The rivers of Siberia and their affluents furnish navigation in all directions through the richest part of the northern plains. The rivers of China are navigable through the plains. What can you tell in regard to the navigation of the rivers of the southern slope? There are few railroads; though India and Japan have several, and Russia is constructing one from Europe to the Pacific. The chief ports in the south and southeast are in steamship communication with Europe and the United States.

Name and locate a seaport in China belonging to Russia. To Germany. To Great Britain. What is the shortest route, and through what waters, from Hongkong to London? From Singapore to New York? From Yokohama to Hamburg? From Yokohama to New Orleans? St. Petersburg is connected with Vladivostok by telegraph. What is the distance? All of the important Asiatic cities have communication with the cities of the whole world. Find out what you can of telegraphic cables.

### THE EMPIRE OF JAPAN.

What does this empire comprise? By what waters is it separated from the mainland? Tell how you think this island chain was formed. Name and locate the four largest islands. What chain continues them to Kamchatka? What chain nearly to Formosa? Tell what you can of the climate and products.

#### SURFACE.

The islands are of volcanic origin and contain many active volcanoes. The highest peak is the dormant cone of the sacred Fujiyama, "Fire Goddess," which rises 12,000 feet above the sea and can be seen for more than a hundred miles. Locate it. Earthquakes frequently occur except on the western slope. The surface is generally mountainous, but there are many alluvial plains.

#### PRODUCTIONS AND OCCUPATIONS.

About four-fifths of the empire is covered with forests, the hill ranges being clothed to the summits. The most remarkable prod-

ucts are the magnificent Japanese cedar, the camphor and lacquer trees, and the bamboo, one variety growing sixty feet in height. Rice is grown in the low-lying districts, wheat, millet, barley, and tea on the higher slopes. Silk culture is extensive. Next to China, Japan produces the most silk of any country in the world. Oranges and persimmons are the only good fruits. There is little



VOLCANO FUJIYAMA.

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The Japanese are patient, cleanly, polite, industrious, imitative. To what race do they belong? Buddhism is the prevailing religion, although there are many Shintos. Find out what you can about

**Shintoism.** *Education* is general and compulsory. There is a complete system of local elementary, secondary, and normal schools with a university in the capital. Daily newspapers abound. There are nearly three thousand miles of railroad, and more in construction.



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## THE CHINESE EMPIRE.

Where is this empire located ? What countries and what waters border it ? How does it compare in area with other countries of the world ? How does it compare in importance ? About how many miles long is its coast ? Name and locate two gulfs. Name two islands near the coast. To whom do they belong ? Tell what you can of the surface by describing the plateaus, the mountains, and the plains.



Describe the two great rivers and tell something of their work. What inland lake and river in the central depression of Turkestan? In what belts of climate does the empire lie? Where is it coldest? Driest? Where is the rainfall moderately heavy?

#### PRODUCTIONS AND OCCUPATIONS.

China may be divided into three sections in climate and products; the most northerly, the valley of the Hoangho and the Plains of Manchuria; the middle section comprising the basin of the Yangtse River; the third section comprising all of China south of the Yangtse basin. These three support most of the vast population. The northern district has short, hot summers, severe winters, with



TYPES OF CHINESE FACES.

little rainfall except during the summer. The mountains are clothed with forests, and the cereals—millet, wheat, corn, and sorghum—are extensively grown. The hardy fruits of the temperate belts and persimmons thrive. The people of this district wear dresses of strong cotton cloth thickly wadded with cotton wool as a protection against the winter's cold. Those much exposed wear sheep-skins; and the rich wear furs. The houses are not warmed. The central and southern sections have an abundance of heat and moisture; rice is the principal product of the lowlands, tea of the slopes. Rice is the principal food of the vast population. Cotton and the mulberry are extensively grown. What industry does the growth of the mulberry promote?

China exceeds all other countries in the production of raw-silk, and produces more tea than all the rest of the world together. Tea and silk are indigenous to China, and were introduced by the Chinese to the world. What other vegetable products are grown? What flowering plants? What product does the poppy yield?

The *tea-plant* is a hardy evergreen shrub from five to six feet in height, which grows best in a warm, moist, equable climate.

The leaves are carefully gathered several times each year and dried in shallow tins. During the process of curing, the leaves are rolled between the hands to press out the juice.

The varieties of black and green teas are produced from the same plants, the differences being caused by a different process in curing. The green teas are dried much more rapidly than the others, the black tea gaining its color through the longer process of curing.

The Chinese have used tea as a beverage from the earliest times.

What birds do you find? Can you tell why there are so few wild animals? The musk-deer is highly valued. The rivers, ponds, and seacoast furnish abundant fish, which are caught in nets and by diving. Hogs are extensively raised, and pork is the principal meat.

What minerals do you find? The coal-fields are enormous, and



RIVER WITH HOUSE BOATS.

there is a wealth of valuable ores and gold; but as yet they are wholly undeveloped. Why?

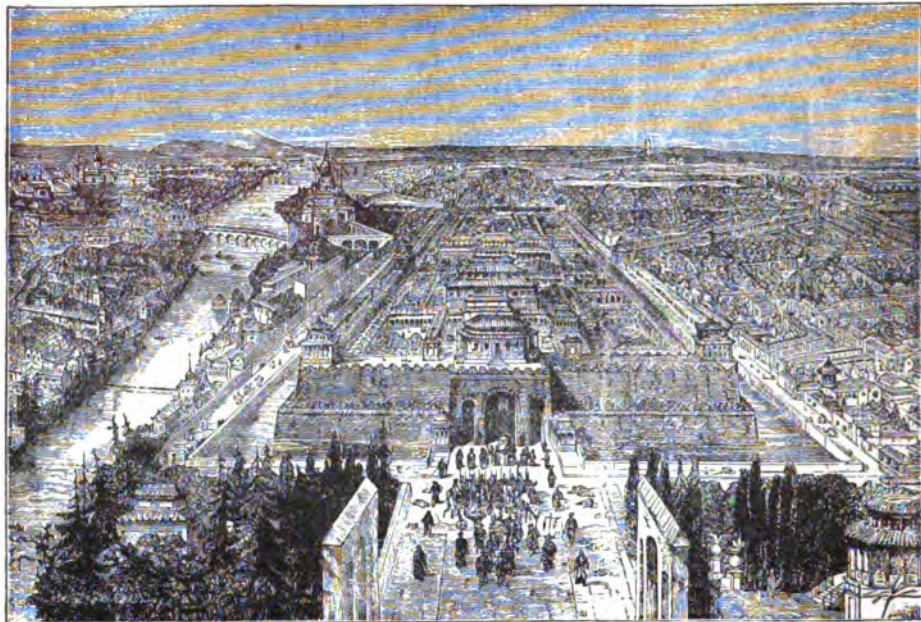
Agriculture is pre-eminently the leading occupation. The spinning and weaving of silk is the work of the women, and the product is not inferior to that of Europe. The Chinese are skillful in the making of lace, porcelain, lacquered ware, and a grass-cloth from a fibrous plant. They excel in the carving of ivory. Nothing can exceed the fineness and art of the Chinese embroideries.

#### PEOPLE.

To what race do the people belong? What are the characteristics (p. 50)? What is the principal religion? What sections are most densely populated? What ones are most sparsely populated?

The people are intelligent, patient, imitative, and industrious. They are opposed to all progress, and live and dress as their ancestors did two thousand years ago. They educate their boys in the past, not the present. Once they were among the leading civilized nations, and were the first to manufacture paper and gunpowder, and to invent printing.

Nearly all the men and boys of China proper are taught to read. In the northern and western parts the men are ignorant,



PEKIN : THE TARTAR CITY.

superstitious, half-civilized. The women are everywhere uneducated and degraded.

What is the form of *government*? Who is the ruler? Where are the laws made?

#### CITIES.

Locate the capital. It is the center of the Siberian trade. There are many large cities. Except in the northern cities, the streets are extremely narrow. They are paved with slabs of stone, but are badly drained and filthy. The buildings are low and made of bricks, stone, and a concrete called "sifted earth." Pagodas and pavilions are the most picturesque. Find out what you can about them and their uses.

The bamboo is the most useful vegetable growth in China. From it all kinds of furniture are made. It is also used for food, pencil handles, canes, poles, fans, cages, baskets, fish-creels, and paper. Find out all you can about it. Bring in pictures.

Locate Tientsin, Shanghai, Ningpo, Fuchau, Canton, Hankau. What port belongs to Russia? What one to Germany? To Portugal? To Great Britain?

Most of the American trade is through the ports of *Canton* and *Shanghai*. *Fuchau* is the great tea-market. What kind of villages are there in the "loess" country. Where is this country?

#### COMMERCE.

Manufactured articles and tea are the chief exports. The imports consist chiefly of cotton goods, opium, petroleum, and metals. Most of the trade is carried on with Great Britain and her colonies, the United States, and Japan. A considerable caravan trade is carried on with Siberia and between different sections of the empire. There are few good roads or comfortable conveyances, even the government couriers making their journeys on horseback. A few railroads are being constructed. Most of the transportation in the lowlands is by means of the rivers and canals.

Until 1842 they had no communication with other nations. Five ports were then opened to the British by treaty. In 1858 five additional ports were opened, and permission granted for British subjects to enter the interior. In 1888 the Yangtse River was opened to foreign trade, and treaties were concluded with the United States, France, and Russia.

HONGKONG, an island about eight miles in length, belongs to the English. Here the European town of *Victoria* has been built. It is the English naval and military station in this section of the world.

What six divisions form the empire? Which is the largest? Which ones border Siberia? Which is most densely settled? Can you tell why? Which two lie in the lowlands? Which lies in the central depression? Which occupies the highest elevation? Which contains a desert of considerable extent? Name the desert? In what sections of the plateaus would you expect to find settlements? Why?

The greater part of CHINESE TURKESTAN is desert, with very fertile oases at the foot of the mountains. What causes them? They are more continuous in the western part, as much of the water which falls, and that of the streams, is utilized for irrigation. In what two occupations must the people be engaged?

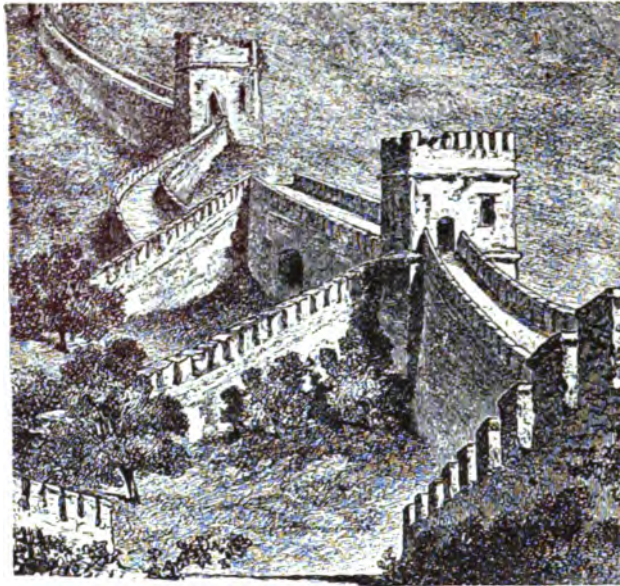
Locate *Kashgar*, *Yarkand*. They are centers of the caravan trade from other sections of China and through the passes of the Pamir.

The home of the Mongolic race was in MONGOLIA, which once occupied a larger area than at present. The inhabitants cultivate the more fertile sections, and rear great herds of horses, sheep, goats, and camels for trade. Locate the caravan trade centers, *Mainatchin*, *SUCHAU*. With whom is the trade carried on in each? Find out all you can about the "Great Wall" of China. Trace it.

Tell what you can of the location, surface, climate and products of MANCHURIA. Indigo and opium are the chief products. Find out all you can about the cultivation of each. The rivers abound in fish,

especially salmon. There are rich mineral deposits which are but little worked. What must be the principal occupation?

The climate is favorable to the development of an energetic, brave people, the *Manchus*. They conquered China more than two



A SECTION OF THE "GREAT WALL" OF CHINA.

centuries ago, and from that time the Chinese Empire has been ruled by them.

Locate *Mukden*, which is the capital and chief city of the division. What Russian port lies on the southern border? Near the eastern border? Several railroads projected by Russia are indicated on the map. What cities will they connect? Of what advantage will they be?

What can you tell of the climate, soil, and products of **TIBET**? Most of the inhabitants are in the Brahmaputra valley. Locate it. What minerals do you find on this plateau? The principal ones are salt, borax, silver, and gold, which are exported. Fine wool, including cashmere wool, is produced. The women weave a fine woollen cloth which with wool form the principal exports. Caravans of yaks, goats, and donkeys are the means by which trade is carried on through the high mountain passes.

While Tibet is tributary to China, it pays but a slight allegiance to the Chinese ruler. The actual ruler is the Grand Lama, the head of a peculiar form of Buddhist religion. He lives in *Lassa*, 12,000 feet above the sea-level. Few Europeans have ever been able to enter any part of the country, and *Lassa* is closely guarded.

Locate **NEPAL**. It is a native monarchy, paying tribute to China. It absorbs more than half the land trade of India, in the imports of food-grains, oil-seeds, cattle, horns, and timber.



## KOREA.

Locate this country. Tell by what waters it is nearly surrounded. What is the general character of its surface? Its climate? Name and locate its capital.

Forests abound in all except the western part. All grains are extensively cultivated, even to rice in the low, wet lands. Ginseng, a drug highly valued by the Chinese, is extensively grown and exported, its duties yielding a large revenue. Domestic animals are few and inferior. The bull is the beast of burden. Iron ores of excellent quality are mined. The principal industries are the manufacture of paper, oil-paper, silk, mats woven of grass, and split bamboo blinds.

The people are similar to the Chinese in race, religion, and government. All offices are held by nobles, and there is no middle class; all who are not officials are of the peasantry.

Gold and hides, with ginseng, are the chief exports. Trade is with Japan, China, and Great Britain. The eastern ports are open throughout the year, but the western port is frozen in winter. Can you tell why? There is little tide on the east, while the west is subject to the high tides of such narrow inlets.

## INDIA.

Locate this country. Tell what countries and what waters border it. Name any indentures, projections, or islands on its coast. About what is its extent of coast? Which coast has the greater number of harbors? Can you tell why? What two groups of islands lie southwest of India?

## SURFACE.

What surface section is occupied by Hindustan? What by Dekkan? Tell what you can of each. What rivers drain Hindustan? What rivers rise north of the Himalayas? What one on their southern slope? What affluent of the Indus gap them? Tell all you can about these rivers. What river gaps the Eastern Ghats? What one flows into the sea north of the Western Ghats? What kind of a plateau are these rivers cutting away?

## CLIMATE, PRODUCTIONS, AND OCCUPATIONS.

In what zones is India situated? Where is there perpetual winter? What winds prevail? Where is the greatest rainfall? The least?

Describe the vegetation of the mountain slopes; of the plains; of the Dekkan. Which are fruits? Which are cultivated for fiber? What minerals abound, and where are they located? What must be the chief occupation of this country?

The climate is divided into three seasons: the hot, the rainy, and the cool. The hot season is from March until the last of May, the

period between the northeast and southwest monsoons. The highest temperature is in the heart of the Dekkan. The rainy season lasts from June until the first of November, during the southwest monsoon, when the regions of greatest rainfall are deluged. A large part of the Indus valley is nearly rainless. Can you tell why? This is the season of intense heat except where rain falls abundantly. The cool season lasts from November to the first of March, during the northeast monsoon. This is the rainy season for the southeastern part, but the rainfall is comparatively light. At this season the lowest temperature is reached in the same regions where the extremes of heat are reached. There are great variations in the amount of rainfall in different years, on account of which vast systems of irrigation have been established. The Dekkan, except the north and southwest, is dotted with thousands of reservoirs for holding irrigating water; the middle course of the Ganges has 28,000 miles of canals for irrigation purposes. What other purpose do these canals serve?

For the most part two crops are raised each year, but not usually from the same land. The universal crops are millets, pulses, and oil-seeds. Find out all you can about the two first named. The principal food of the agricultural districts, except in the northwest, consists of millet, pulses, and garden produce. The principal pulse is the chick-pea, as in Spain. In the northwest provinces, barley and wheat, especially the latter, are largely produced. Rice is extensively grown in the low-lying districts, tea on the northern slopes of the Himalayas, and the poppy and cotton in several sections. Where is indigo cultivated?

Cattle are the chief beasts of burden and draught. Considerable attention is given to rearing them in the northwestern part on the slopes. What are some of the wild animals? India is the home of the fierce man-eating tiger and many deadly snakes.

Minerals, except silver, are abundant. The mines are undeveloped. Salt, as in all vegetarian countries, is urgently required. It is obtained by evaporation all along the coast and also in arid regions in the northwest. The Plains of India afford a rich natural supply of saltpeter, which is used in making gunpowder.

In various branches of manufacture, handicrafts have suffered from European competition. Native cotton mills have told heavily on the old hand spinning and weaving. Indian artisans still excel in making various articles of luxury and art. Richly figured silks are hand-woven in some provinces. Cashmere shawls, Indian carpets and rugs, skillfully wrought articles of ivory, gold, silver, copper, and brass are exported. From jute fiber gunnycloth sacking is made for packing products such as coffee and grains.

#### PEOPLE.

How do the area and population compare with those of the United States? The greater part of the population consists of Hindoos. To which of the three



rac<sup>es</sup> do they belong? How did Brahmanism develop (p. 55)? To what great race did the Brahmins or priests belong? To what people was the lowest caste



GENERAL VIEW OF CALCUTTA.

confined? Of whom did the middle castes consist? How did Buddhism develop? What are the principal religions of India to-day (p. 54)? In which section does Mohammedanism prevail?



A NATIVE VILLAGE NEAR CALCUTTA.

There are universities and colleges in Calcutta, Bombay, and Madras, where English is taught in all its branches and literature, as well as the native language. Technical instruction and physical

science are in their infancy. Of the students only about one-twelfth are girls. As yet school attendance is not compulsory.

In *government* India is under the control of Great Britain, although the English form but a small percentage of the population. The King or Queen of Great Britain is called the Emperor or Empress of India. The English sovereign appoints a British governor-general, who resides in India and governs the country according to the direction of the executive branch of the home-government in London. Who is the present viceroy or governor-general? Where does he reside?

#### CITIES.

Locate the capital, which is also the principal seaport. Name another seaport on the eastern and two on the western coast? What one near the mouth of the Indus? Locate Delhi, Benares, Lucknow, Haidarabad.

*Bombay*, the largest city and principal seaport on the west coast, has a fine harbor. It is connected by railway with Calcutta, Madras, and the northwestern frontier. Its exports are wheat, cotton, shawls, opium, pepper, coffee, ivory, and gums. Its imports are piece-goods, yarn, thread, wine, beer, milk, and tea.



A NATIVE MILL FOR MAKING COCOANUT OIL IN CEYLON.

Which of these come from England? In this city there are Mohammedans, Hindus, Parsees, Christians, and Jews. Find out what you can about the peculiar worship and rites of the dead among the Parsees.

*Madras* is a great trade center.

*Karachi* has a splendid harbor and is noted for its wheat trade.

*Delhi* is the sacred city of the Mohammedans in this part of the world.

*Benares*, the oldest and one of the most curious cities of India, is the holy city of the Hindoos. In this city are many animals which are considered sacred. Pilgrims flock here to bathe in the sacred Ganges, or to die on its banks.

Name and locate a harbor belonging to Portugal. To France.

Canals and rivers in the Plains, railroads, and good English roads serve as the means of transportation in most sections.

Why are the rivers of Dekkan poor trade routes? Most of the trade is with Great Britain and China. How is the trade carried on with Persia, Afghanistan, and Baluchistan? Through what passes? How is the trade carried on with Tibet? With Nepal?

Locate the native monarchy of BHUTAN, which is partly controlled by the British.

CEYLON, a British crown colony, is about half the size of England. It is mountainous in the south, a level forest plain in the north. The southwestern part receives the rainfall of the monsoon and is covered with coffee and cocoanut plantations and rice-fields. The northern plains require irrigation for successful cultivation. The chief exports are coffee, tea, cocoanut products, and cinchona. Graphite is the only mineral of commercial importance.

This island is scantily populated except in the southwest.

*Colombo* is connected with the European plantations of the higher mountain terraces by railroad. *Point de Galle* is a port of call for ocean steamers.

## INDO-CHINA.

This peninsula is divided between Great Britain, France, and the native kingdom of Siam. The British territory consists of the former empire of Upper and Lower Burma and the Straits Settlements; the French territory comprises Tonkin, Anam, Cambodia, and Cochin-China. Locate each. Anam and Cambodia have native rulers under French control.

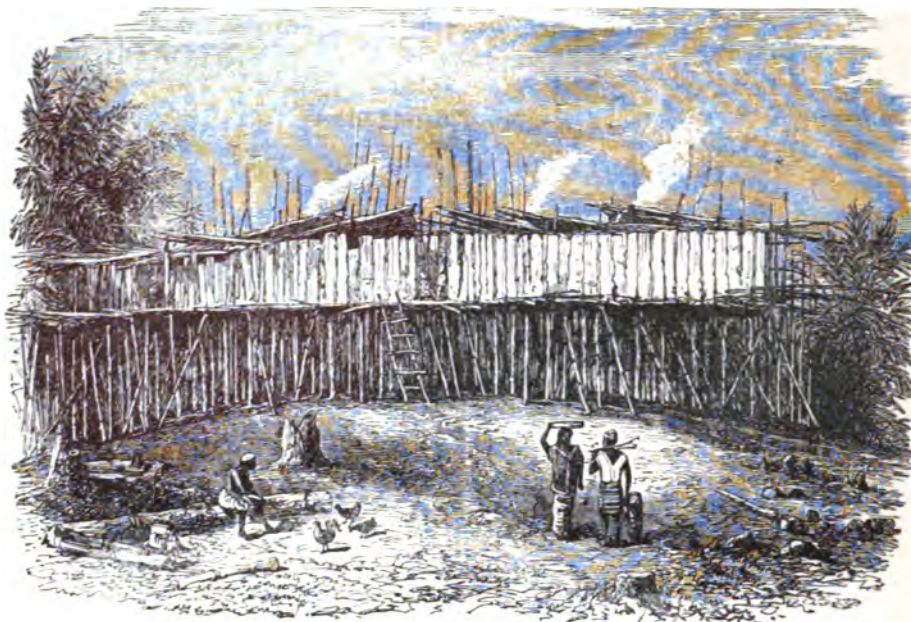
How is the peninsula of Indo-China formed? What is the general direction of the mountains? What peninsula is formed by the longest range? What name is given the narrowest part of this extension? Name and locate three gulfs indenting the coast? By what rivers is Indo-China drained? In what kind of valleys do the rivers flow? Which rivers build deltas? Locate the plains of this peninsula? Which divisions are located among the highlands? Which in the plains? Describe the surface; the climate.

### PRODUCTIONS AND OCCUPATIONS.

The navigation of the rivers is greatly impeded by rapids. The Irawadi and its principal affluent from the north form the outlet for the natural produce of the valleys, and are the carriers of the timber. All the rivers flow through great forests of teak and sappanwood, Burma alone supplying nine-tenths of the timber export of British India. Most of the rice in the world's commerce comes from Lower Burma, the density of population in other rice-growing sections preventing its export.

Besides rice and teak, other important products are rubber, petroleum, coal, gold, and rubies. Burma furnishes the finest rubies in the world. The indigo of Tonkin rivals that of the Bengal district. What are the principal occupations?

THE MALAY PENINSULA is mountainous and clothed with dense forests. At the isthmus is a gap in the chain which forms this peninsula. What may have caused this? Guttapercha and other



BAMBOO HOUSE IN BURMA.

tropical products are obtained from the forests and plantations. The chief export is tin, the vein from which it is produced being the richest in the world.

#### PEOPLE.

The people of Indo-China are of the Mongolic race, the Malay branch residing in the peninsula of that name.

The Malays are being ousted in occupations and trade by more enterprising immigrants from China and India. The great heat and moisture tend to make the natives of the low-lying districts indolent; and as nature provides for most of their wants, enterprise is at a low ebb, except where foreigners have settled.

In what sections is the population dense? Sparse? Why?

What is the prevailing religion?

Name and locate the capital of Siam. Of Cochin-China. Locate Mandalay, Rangoon, Singapore, Hanoi. *Rangoon* is the chief seaport of Burma. Two-thirds of the exports are shipped from this port. *Bangkok* is a poor port because of the sand-bar at the mouth of the river. Goods have to be discharged from large vessels in the gulf by the use of smaller boats.

At *Saigon* is the seat of French government in this part of the world.

From *Singapore* and the Straits Settlements, spices, coffee, and other tropical products are sent to the United States. Singapore is a trade center and an important station where vessels stop for coal and repairs. About what is its direction from New York? From London?

## COMMERCE.

There are no roads ; goods are transported laboriously and at great expense on the backs of elephants, oxen, ponies, and human porters. Two railways follow the river-valleys northward from Rangoon ; others are projected.

Next to India, Indo-China has the greatest foreign commerce in Asia. It is mostly with Great Britain, China, United States, and



ELEPHANTS AT WORK, INDO-CHINA.

France, and is under the direction of Europeans, although there are many Chinese merchants.

How would you go from Singapore to Manila ? From Singapore to San Francisco ? To New York ? To London ? To Odessa ? To Rio Janeiro ? To Havana ? To Paris ? To Melbourne ?

## ASIATIC RUSSIA.

About what proportion of Asia does this section occupy ? What countries and what waters border it ? Name the coast indentations. Projections. How is the section politically divided ? What name is given the greater part ? Of what surface division is it a part ? Describe the surface and drainage of Siberia. How is the southwestern section drained ? What other lake than Aral lies in this depression ? The high peaks of the Altai are snow-capped and the source of glaciers. How does this affect the rivers ? The large rivers are deep and navigable for large steamers for long distances. Why are they not of greater importance ? Tell what you can of the climate. How are the heat and cold intensified ? At what seasons and where would you expect no sunshine ?

## CLIMATE, PRODUCTIONS, OCCUPATIONS.

Siberia is the coldest country in the world. The general dryness of the winters makes it possible for man to endure the intense cold. During the short and hot summer, with a

cloudless sky and continual sunshine, the crops soon mature and the hardy fruits ripen. What grains and what fruits grow here? In what part? Where is there no vegetation for man? In the spring, in what part of the courses of the northern rivers will the ice break up first in this country? Why? Ice-gorges occur and the flat lands are inundated; but the rivers finally clear themselves and are open to navigation for a few weeks. The water cannot drain off, so there are vast areas of forest marshes, especially in the western part.

With the exception of the steppes, the far north, and the higher mountain summits, Siberia is clothed with forests of various kinds. The deciduous forests are interspersed with grain-fields and meadows. How does the vegetation of Siberia vary from that of European Russia? In which are the grains grown farther north? Why?

A vast section stretches across the country, called the "Granary of Siberia," from which wheat, corn, oats, and barley are exported. Thousands of horses, cattle, sheep, and reindeer are raised. What are the chief occupations? What natural products of the rivers, forests, and mines promote other occupations?

The want of technical knowledge prevents the growth of manufactures, although Siberia is rich in raw material.

What minerals do you find? Siberia is rich in undeveloped mines. The gold outcrops along the border of the highlands are the best known.

#### PEOPLE.

What can you tell in regard to the density of population? There are many branches and mixtures of people represented; among them being the native tribes of aborigines, Mongolians, consisting of Chinese, Turks and Eskimos, and the Russian exiles and free immigrants. The latter are depleting the forests and rivers of animals and are taking the grazing grounds from the natives, who are nomadic and live by herding, hunting, and fishing.

What religion is represented by the Russians? By the Turks? By the Chinese? The others are Pagans.

The masses are in ignorance, although there are a few opportunities for a classical education, but none for a primary and technical one, which is greatly needed. Where are the laws made which govern this country? Under what form of government? Who is the ruler?

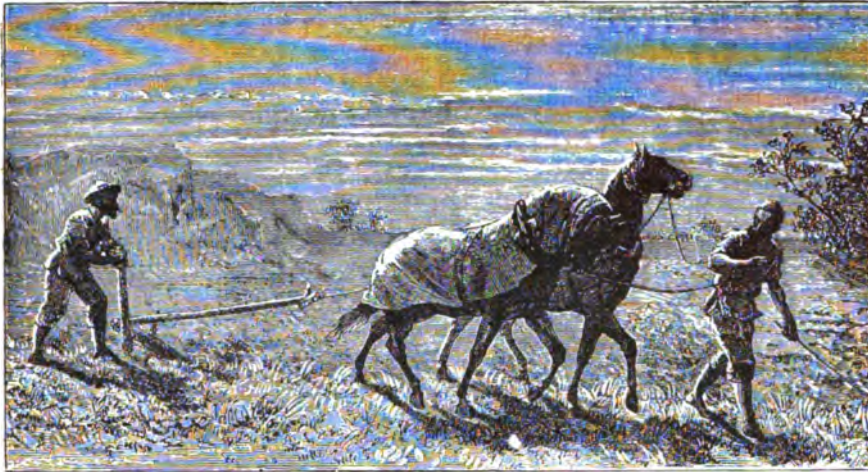
#### CITIES.

Name an important trade center on Lake Baikal. An important seaport in the southeast. Locate Omsk, Tomsk, Yakutsk. Kiakhta, Tiumen, Tashkand. Through which does the Trans-Siberian railroad pass? This road is finished in construction as far as Irkutsk, a fur and trade center. It will extend to Vladivostok when completed. There is a great postal road from Tiumen to the Amur River over which much traffic and many travelers pass.



## RUSSIAN TURKESTAN.

Where are most of the towns in the southwest? What inference may we draw from this, in regard to the fertility of other portions of this section? The



TURKOMAN PLOWING—ARAL-CASPIAN BASIN.

prairies of European Russia merge into a desert interspersed with fertile sections or oases in the Kerghiz Steppe. What causes the oases? In the southern part of Turkestan, in Bokhara and Khiva, melons, cotton, grain, and the mulberry are raised. Cattle are raised in the uplands. Name and locate the capital cities of this section. *Tashkand* is a trade center. How is trade carried on? By what routes?

**KHIVA** and **BOKHARA** are small states having native rulers who pay tribute to Russia. Bokhara produces silk and silk fabrics, which are exported.

## ASIATIC TURKEY.

Where is this country located? It comprises Asia Minor, Syria, a part of Armenia, Mesopotamia, and extensive coastal strips on the Arabian Plateau. What waters and countries border it? Across what waters is its nearest approach to European Turkey? The surface of Asia Minor consists of an arid tableland about three thousand feet in height, skirted by fertile valleys and plains. What mountains border it? Describe the remaining surface. The drainage. Tell what you can of the climate, natural products, area, animals. Tell in what sections different vegetable products are grown. Where do palms grow? In what section will they be similar to those of southern Europe and northern Africa? The camel and dromedary must be added to the ordinary list of domestic animals. What must be the occupation in the lowlands? The uplands? By what means is sufficient moisture secured in agricultural districts?

### PRODUCTIONS, OCCUPATIONS, AND PEOPLE.

One of the most productive sections is Yemen. Locate it. Here the vegetation is varied and often luxuriant. The mountains



rise above 10,000 feet, and their terraces are successfully cultivated. The famous Mocha coffee is grown in the lowlands; tobacco and grains, at higher levels.

The leading occupation is the rearing of Angora goats and sheep. The mohair of the former is woven by hand into shawls; the wool of the latter into carpets and rugs; these manufactures, with the skins and mohair, are exported.

The valleys and plains of this entire country were once very productive and supported a large and fairly progressive population, which under Turkish misrule has rapidly declined.

There are valuable salt mines in the northern part and rich copper mines near the Euphrates. What other minerals do you find?

About half of the people consist of Armenians, Arabs, Greeks, and Jews; the rest are Turks. The first four are descendants of Aryan



BRANCH OF FIG-TREE.

branches. What race and religion are represented in the Turks? The Armenians are Christians, the Greeks are Orthodox Greek, the Arabs are Mohammedans. Schools for elementary *education* have been established in recent years. Where are the laws made? Who is the ruler?

#### CITIES.

Locate Smyrna, Damascus, Bagdad, Jerusalem, Beirut, Trebizond, Mocha, Mecca, Jiddah.

*Smyrna* has a fine natural harbor and exports raisins, opium, figs, dates, licorice, and sponges.

*Damascus* and *Bagdad* are the oldest cities of which we have any knowledge. Enormous caravans of camels pass to and from these cities, exchanging the dates, tobacco, spices, and carpets of the East for the products of the factories and workshops of Europe. *Bagdad* also has a considerable sea traffic by means

of small boats. Through what waters? *Beirut* is the port of Damascus, to which it is connected by railroad.

*Jerusalem* was the holy city of the Jews, and is often spoken of in the Bible.

*Mecca* was the birthplace of Mohammed, therefore it is the holy city of the Mohammedans. *Jiddah* is its seaport. Mohammedan pilgrimages make them of commercial importance. *Trebizond* is an important port. For what district is it an outlet?

Locate the island of Cyprus. It is tributary to Turkey, but has been under the administration of Great Britain since the Treaty of Berlin in 1878. Find out what you can in regard to this great treaty.

## ARABIA.

How is this country bounded? Tell what you can of its surface. Its drainage. Its climate. Its productions. Why is it so generally barren on the tableland?

This region has many fertile sections, or oases, which occupy inland stream valleys. The oases are covered with grass, and the date-palm flourishes. These are the typical regions occupied by Arab tribes, called Bedouins, in their race purity. They live in



BEDOUINS.

tents and lead a wandering life, changing their abode each summer and winter, with their camels and herds of fleet Arabian horses.

The settled or village Arab tribes are mixed in race, and are consequently despised by the Bedouins. They are engaged in

agriculture, herding, and small trade. The soil is fertile when irrigated and yields abundantly. A short rainy season during the summer fills the hollow places and old stream-channels, thus aiding irrigation. There are many minerals and precious stones, but mining is undeveloped. Dates, figs, spices, myrrh, and gum arabic are exported, but not in quantities as formerly.

Arabia is said to be "the anti-industrial center of the world," where there are no improvements except those forced upon the people by foreigners.

Boys are given home instruction in the rudimentary branches and in politeness and self-restraint. The *religion* is Mohammedan. The *government* is patriarchal, each tribe being governed by its own ruler or Sheik. What race is represented?

Locate ADEN. It has belonged to Great Britain since 1839 and is annexed to British India. It is one of the hottest places in the world, in a sterile region where firewood, provisions, and water have to be imported; yet it is of great importance as a seaport, because it commands the entrance to the Red Sea.

OMAN lies southeast of Arabia in a mountainous district, having a fair supply of rainfall, which with irrigation produces tracts of great fertility, yielding a variety of products from the terraced sections. On the shores of the Persian Gulf the finest pearls in the world are found, forming an important export.

This section is governed by a powerful, independent ruler, the Sultan of Oman, who is in alliance with Great Britain. He resides in *Maskat*, a seaport and trade center of some importance. Locate it.

## PERSIA.

What waters and countries surround Persia? The greater part of what surface division does it occupy? What mountains form its northern and southern borders? What can you tell me of the interior surface? Its drainage? Its climate? Its products? Some rain falls on the mountains and coast. How are other sections rendered productive?

### PRODUCTIONS AND OCCUPATIONS.

The southern slopes of the Elburz are clothed with forests, and the plain at the foot of the mountains is studded with rice-fields, vineyards, mulberry, cotton, and sugar plantations, orange groves, and orchards. Other sections produce grains, tobacco, and opium from the poppy. Where do date-palms grow?

Through the misgovernment of despotic rulers, production and trade are in a backward state. The principal occupation of many of the people is the rearing of horses, cattle, sheep, goats, and camels.

Salt, sulphur, and naphtha are the most important mineral

products, and are exported. Camel's-hair cloth, mohair shawls, and carpets, which have a worldwide reputation, made on hand-loom, are about the only manufactures. Silk-culture is important in the Caspian provinces.

#### PEOPLE.

The majority of the people are Mohammedans. Elementary *education* is general and widely diffused, and there are a few colleges.



INTERIOR OF A PERSIAN HOUSE.

The ruler of this despotic monarchy is called the Shah. It is one of the oldest governments in the world.

#### CITIES.

Name and locate the capital. Locate Tabriz, Ispahan. Name one seaport on the Caspian; one on the Persian Gulf.

*Ispahan*, the former capital, is an important trade center.

*Tabriz* and *Teheran* are the centers for an immense caravan trade, especially between India and Europe.

#### COMMERCE.

Other exports than those named are opium, tobacco, almonds, and fruits; silk, cotton, wool, and carpets; drugs, gums, and pearls.

There are no railroads or good roads in Persia. How must trade be carried on? The Russians have the principal trade of the northern section, the British of the southern. Telegraph lines and post-offices have been introduced.

## AFGHANISTAN.

In what part of Iran does this country lie? Bound it. What can you tell of its general surface? What mountains cross it? How do they affect the slope?

It resembles Persia in surface, climate, and productions; being nearly barren except in the mountain valleys and where irrigation is practiced; violent northwest dust-storms are frequent.

The valleys have a settled population engaged in agriculture, stock-raising, the making of silks and carpets, and the preparation of goat skins for trade. Several caravan trade routes cross this country leading to India, to Russia, and to Turkestan. Through what mountain passes?

As a rule the Afghans do not inhabit towns. The population consists of many tribes united under one ruler, the Ameer.

Name and locate the capital. Locate Herat. Both are walled cities and caravan trade centers.

## BALUCHISTAN.

In what part of Iran is this country situated? Bound it. About how many miles of coast has it? The fishing-villages on the coast are only collections of wretched hovels. Why are there no seaports? Tell what you can of its surface. Of its climate.

The desert regions, which are largely in the west, are impassable in summer because of sandstorms, and in winter because of the piercing winds.

Much of the country is better adapted for grazing than for cultivation. Wherever there is sufficient moisture, however, the soil is productive, the products being similar to those of Afghanistan and Persia; the date is carefully cultivated in the coast district. Fish abound off the coast. Rich petroleum wells are in the northern part.

The people are similar to the Afghans. The settled tribes are generous and hospitable. The half-civilized, wandering tribes are engaged in stock-raising and herding. All are Mohammedans. The tribes are governed by a ruler, the Khan, who is controlled by the British government in India. Name and locate the capital; this town consists of 14,000 inhabitants, a number of poorly built and dirty houses, and an old citadel.

Ninety miles of the Indo-Afghan railway have been constructed across the desert in the northeast, through the Bolan Pass to Quetta, which is occupied by the English.

Compare the countries of western Asia in surface, products, manufactures, means of trade, people, religion, and occupation. For what is each especially noted? How do they differ in government?

## THE EAST INDIES.

Between what two continents are they? In what direction from each? In what latitude? In what longitude? Which two are the largest? What strait between New Guinea and Australia? Locate Sumatra. What strait separates it from the Malay Peninsula? Locate Java. What small island east of Sumatra? What island east of Borneo? What strait intervenes? Locate the Moluccas, or Spice Islands.

The East Indies are of volcanic origin and still contain many active volcanoes and experience numerous earthquakes. The larger islands have considerable elevation.

They lie almost under the equator, and have therefore a torrid climate in the lowlands. The interior, from 2000 to 5000 feet high,



A BAMBOO BRIDGE IN BORNEO.

is temperate in climate. Both the Torrid and Temperate Zones have abundant moisture. From 5000 to 8000 feet above sea-level the climate is cool, and at about 8000 feet the thermometer sometimes falls to 30 degrees. There is almost no rain at this elevation. Why?

The western islands are subject to the monsoons and the eastern islands to the typhoon. Explain the action of monsoons (p. 41). What is the typhoon?

Agriculture is the leading occupation. Coffee, tea, rice, indigo, cotton, sugar, and spices are grown. Cinchona, camphor, and strychnine are produced.

Some of the animals are wild sheep, gazelles, monkeys, tigers, leopards, elephants, and rhinoceroses.

Gold, tin, copper, iron, mercury, and antimony abound.

Teak, ebony, sandalwood, ironwood, and satinwood are taken from the forests.

To what country do most of the East Indies belong ?

NEW GUINEA is, next to Greenland, the largest island in the world. By what three nations is it owned ? It is nearly five times as large as New England.

BORNEO, larger than the State of Texas, is rich in diamonds, and supplies most of the antimony of commerce.



COFFEE DRYING. JAVA.

JAVA, about the size of New York, has a fine climate and is noted for the production of rice, coffee, sugar, cinchona, and strychnine. It is also noted for its large number of volcanoes.

SUMATRA is rich in minerals: gold, iron, copper, and tin; also in vegetable products: pepper, caoutchouc, dyestuffs, and camphor. It is larger than any of our States except Texas. Compare with New England in size.

BANCA is noted for its tin mines; THE MOLUCCAS, for the production of cloves and nutmegs.



# AFRICA.

## LOCATION AND OUTLINE.

Locate Africa on the globe. Point to it and tell its direction from us. Tell its direction from each of the other continents. Imagine yourself in the northern part of Africa; state the direction of each of the other continents from you. Tell the nearest route to each. Between what parallels of latitude does Africa lie? What parts of other continents lie within these parallels? In what zone is the greater part of Africa?

Between what meridians of longitude does it lie? What part of Eurasia lies within the same? Bound Africa. By what land and where is this great peninsula attached to Eurasia? By what waters is it separated from Europe? From



A NATIVE FROM THE COAST OF MOZAMBIQUE.

Asia? Across what strait is its nearest approach to Europe? What is its greatest length? Its greatest breadth? Compare its area with each of the other continents.

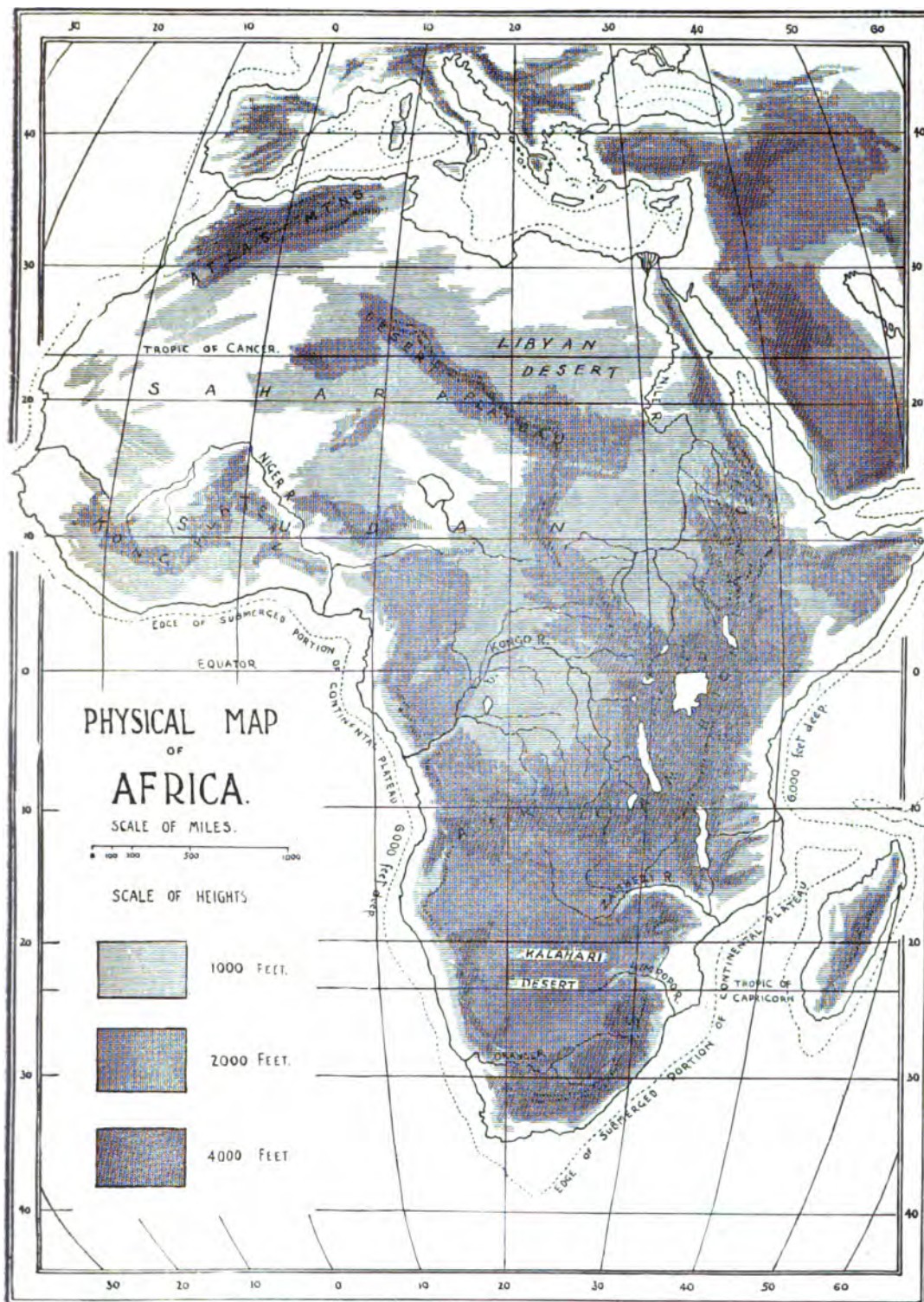
What is the especial feature in regard to the African coast? Name and locate two gulfs on the northern coast; one bay on the southeast; a large gulf on the western coast. Name and describe one cape on the north, two on the east, two on the south, and four on the west? Which are the most northern, eastern, southern, and western points? How does the continental shelf compare in extent with that of the other continents?

What large island southeast from Africa? How is it separated from the mainland? What island lies farther east? To whom does it belong? Locate Sokotra and name its owner.

MADAGASCAR is under the protection of the French. Its interior is well suited to the rearing of cattle. The exports are rubber, cattle, hides, and wax.







MAURITIUS is covered with sugar plantations worked by coolies. It exports great quantities of sugar to India, Australia, Great Britain, and the United States. SOKOTRA is noted for its export in aloes.

Locate St. Thomas, the Azores, and the Cape Verde Islands. Name two groups of islands off the northwest coast of Africa. To whom does each belong?

ST. THOMAS has a large number of cinchona, coffee, and cacao plantations. MADEIRA exports wine and fruit; the CANARIES, cochineal. The AZORES supply quantities of pineapples and oranges. ST. VINCENT, one of the Cape Verde Islands, has a fine harbor and is a calling station for Atlantic steamers.

Locate ST. HELENA. Great Britain banished Napoleon to this island for the remainder of his life, after his defeat at Waterloo. Find out what you can of Napoleon; of the battle of Waterloo.

#### SURFACE.

What is the general surface of this continental plateau? Where are most of the mountains? In what part are the most elevated highlands? In what parts are the lowlands? Toward which oceanic basin is the general slope? How do you know this?

Trace the African Highlands or continental divide. What large river does it send eastward to the coast? Describe it. What lake is drained by one of its tributaries? Locate Victoria Falls. What river gaps the highlands south of the Zambesi? Locate Mt. Kenia, Mt. Kilimanjaro. What mountains border the southeastern part of the plateau? What river rises in these mountains and flows westward to the sea? Locate the Kamerun Mountains, the Kong Plateau, the Desert Plateau, Atlas Mountains. What great river-basins are partly divided by the Desert Plateau? Describe the Kongo. What large lake does it drain? From which slope does the Kongo receive the greater number of tributaries? What does this tell us in regard to rainfall? Name one tributary from the south; one from the north. What falls are in the Kongo's course? Describe the Niger. In what part of its course has it many feeders? Why does it take such a bend to north? What great lake basin in the interior of Africa? Name its largest tributary. From what direction does it receive its tributaries? What does that tell us of the other sections?

What two rivers flow westward north of the Kongo Plateau? Where do they rise? Describe the Nile. What two lakes does it drain near its source? Name two affluents. From what direction does it receive no affluents? What does this tell us? What causes the bends in the Nile? Trace the divides between all the different river-basins. Which rivers have deltas?

Rank the rivers according to the area of basin. According to their length. According to their importance. How do they compare with other large rivers of the world in length, area of basin, importance?

Nearly two-fifths of the area of Africa is desert. What deserts are in North Africa? What one in South Africa? What is the principal cause of a desert?

Africa is not marked by such great heights in the highlands or such vast low-lying plains as are the other continents. There is greater uniformity of surface. The southern part of this continental plateau consists of a vast tableland having a mean elevation of 3500 feet descending northwestward to a vast lowland-plateau with a mean elevation of 1300 feet in North Africa. It is bordered for the most part by low broken mountain ranges near the coast. Between these border mountains and the sea are narrow coastal plains, very narrow at the southern extremity.

The highlands reach their highest elevation in the Abyssinian uplands, from 6000 to 13,000 feet in height. From here they stretch southward in an almost continuous coast range, to the Snow Mountains. The highest points of elevation on the continent and the only snow-clad peaks are the extinct volcanic cones, Kenia and Kilimanjaro. From Abyssinia a spur extends northward to the Mediterranean, forming the divide between the Nile basin and the Red Sea.

From the vicinity of the equator the African Highland sends a long arm, the Desert Plateau, northwestward across the Sudan and Sahara beyond the Tropic of Cancer. It forms a divide between the Nile basin and the Kongo and Lake Tchad basins.

The west-coast ranges are much lower and less continuous and have many wide gaps, the widest being between the Senegal River and the Atlas Mountains. They reach their highest elevation on the western coast in the Kamerun Mountains, about 13,000 feet in height. The well-defined Atlas Mountains, 8000 to 12,000 feet, are parallel with the Sierra Nevada of Spain. Note their continuation in Sicily and the Canaries.

There are evidences of uplift on the Red Sea and Morocco coasts, and of subsidence between the Gulf of Sidra and the Nile delta. There is considerable volcanic activity and frequent earthquakes in the eastern section of the African Highlands. What may this indicate? Earthquakes also occur in the Atlas Mountains and there are a few active volcanoes in the Kameruns. East of the lake section there is an extensive lava plateau. How was it formed?

African rivers are characterized by many rapids and waterfalls in their middle or lower courses as they descend from the higher to the lower tablelands, or to the sea. Between these falls the country is often so level that the streams flow slowly and spread out to a great width compared with the volume of water.

The *Nile*, including the White Nile, is over 4000 miles in length from its farthest source in the lakes of Victoria and Albert to the Mediterranean. After receiving the Atbara it flows for 1700 miles without receiving a single tributary. Its flood-plain embraces nearly all of Egypt. About one hundred miles from the sea, it branches into two large streams and several small ones, and builds its far-famed fertile delta, which borders the sea for two hundred miles.

Above Khartum it is navigable for river steamers for nine hundred miles; but below this town its course is interrupted by six

cataracts. Above Khartum, its course is through dense forests and fertile meadows; below, it flows through sandy deserts. The fertility of Egypt is wholly dependent upon the periodical rains in the upper Nile basin. The Nile rises from May until September, when, as its waters begin to recede, they are turned into canals for irrigation.

The *Kongo* ranks next to the Amazon in its volume, and doubtless carries more water than all the other African rivers together. At its mouth it is six miles wide and of great depth. Its naviga-



WOMEN FILLING WATER JARS IN THE NILE.

tion is interrupted about 140 miles from its mouth, where it descends from the plateau through a gorge forty miles wide. On the tableland it is navigable for shallow-bottomed boats for long distances. How does this river differ in its lower course from most other rivers?

The *Niger* above its falls is much more important for navigation than any other African river except the upper course of the Nile. Its large affluent, the *Benue*, is a rival in volume and beauty, and is navigable into the very heart of Sudan. The united streams, Niger and Benue, leave the sandstone plateau and, after flowing through a narrow gorge, break up into one of the largest and most remarkable deltas in the world, covered with a dense mangrove thicket. Find out what you can of the mangrove.

In the course of the *Zambesi* are the magnificent Victoria Falls, which are surpassed in grandeur only by Niagara. Above these falls the river is over 3000 feet wide. Suddenly its waters fall into a narrow chasm 100 feet deep and only about 90 feet wide.

The *Orange* has many falls and is little used for navigation.

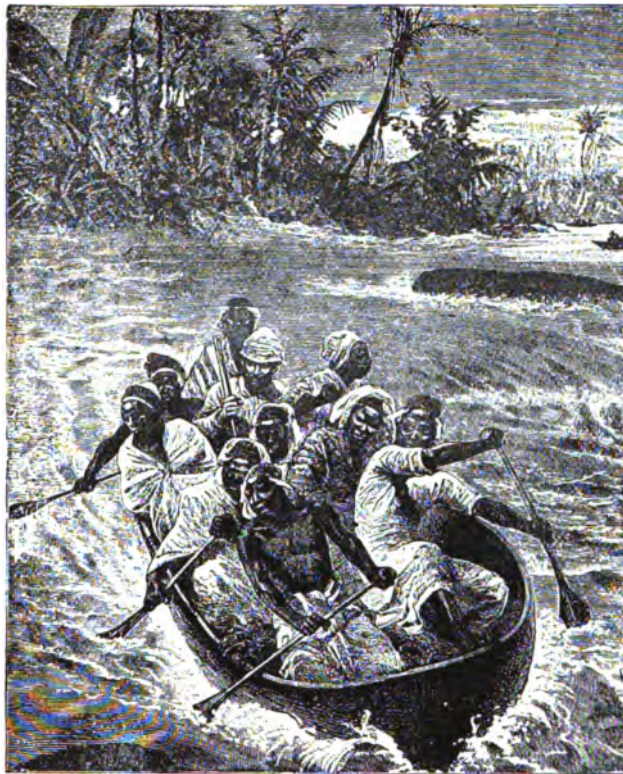
Africa has a splendid equatorial lake-system, unrivaled except by the Great Lakes of North America. The *Victoria* is next to Superior the largest fresh-water lake on the globe. *Lake Tchad*



during the wet season spreads out to several times its area of 10,000 square miles in the dry season. Its waters ooze far under ground and supply the springs for the oases in the Sahara. In the surrounding marshes, which are covered with reeds and papyrus, are many herds of hippotami, crocodiles, elephants, and rhinoceroses.

#### CLIMATE.

In what zones does Africa lie? How is its position different from all other continents? Compare with South America. What are the prevailing winds? The easterly winds bring abundant rain to South America; why do they not to North Africa? How does the position of the highlands affect the rainfall? In



IN THE RAPIDS OF THE KONGO.

what section do the great rivers have their sources? What does this indicate? Can you explain this great rainfall in the equatorial region? What part of the African coast is affected by the southwest winds? How are the rain-bearing winds shut off from the Kalahari Desert? What must be the healthfulness of the low-lying marshy districts of the coast and the interior? What ocean currents flow along the coast? Which is cool? Which are warm? From the chart explain the course of each.

Africa is generally dry. The interior lies in both the north and south equatorial rain belts, which with the great heat have produced



a broad belt of tropical forests, containing trees of great size and height, with rank and almost impenetrable undergrowth on the coast and in the river valleys. In what other continent have we similar conditions? With what differences? How do the forests increase the moisture? On either side of this belt, the forests merge into belts having a park-like appearance, which again merge into the prairies of the Sudan and Zambesi regions. North of Sudan and south of the Zambesi belts are the desert regions.

The productions of North Africa are similar to those of southern Europe. The uplands and southern slopes serve for pasturage. During the rains the water from the southward streams of the Atlas Mountains is turned into wells and reservoirs for irrigation. South



A VILLAGE IN ASHANTI, NEAR THE GOLD COAST.

of the mountains are a chain of shallow salt lakes called *shotts*, which lie in a depression below sea-level.

The seaward slopes of southeast Africa receive the rainfall from that direction in summer while the seaward slopes of the southwest receive a winter rainfall. Why? The winds which sweep over North Africa from the north and northeast have already passed over some part of Eurasia, from which most of the moisture has been taken, hence the deserts. The little moisture gathered from the Mediterranean in passing over it is deposited on the northern coastal plain.

The Sahara is subject to terrific sand-storms called *simoons*, which bury everything in their paths and pile the sand into great dunes.

This sand is the disintegrated sandstone of the plateau, upon which the sand itself rests. The Nile has in places cut through the sandstone to the uneven rocks underneath, hence the cataracts. There are many fertile oases in the desert, covered with date palms and grass; they are inhabited by the Bedouins, as in Arabia.

#### PRODUCTIONS AND OCCUPATIONS.

What sections of Africa yield vegetable productions like those of other continents? What ones are not found in the other continents? Find out what you can of them. The most wonderful African plant



AFRICAN TYPES.

is the baobab, which attains great circumference but not great height, spreading out so that a single tree resembles a small grove; its chief marvel is its great age, it probably being the oldest organic monument of our planet.

The papyrus rush often covers the low-lying marshes, especially those of the Nile. From it the ancient Egyptians prepared their paper, upon which are preserved interesting records of their customs, manners, and history. The acacias yield gums, and the seeds of the oil-palm yield the valuable palm-oil. Name the food plants of the different sections. Where is manioc a valuable food plant?

What large wild animals do you find on this continent? What birds? The wild animals are rapidly disappearing; can you tell why? Africa has a great number of flesh-eating animals; can you name them? The grass-eaters are the rhinoceros, antelope, elephant, zebra, giraffe, and hippopotamus. The last two belong exclusively to Africa. The African elephant is not now domesticated; but formerly it was used in war, as a beast of burden. The largest ape, the gorilla, is an inhabitant of the thick jungles of some equatorial sections of this continent. Africa has many birds, the ostrich being the



largest and most valuable. Bring in pictures and find out all you can of the characteristics and habits of all animals mentioned. The camel, the ox, and the human porter are the chief beasts of burden.

What can you say of Africa's mineral wealth? Why do you suppose there are so few minerals mentioned? Which sections seem to be best known? What minerals do you find in each? The greatest number of diamonds in the world are now obtained from South Africa, the Kimberley mine being most celebrated. Here, in a desert region, the city of Kimberley has been built, with over



A VILLAGE IN WEST AFRICA.

30,000 inhabitants, water-works, electric lights, railroads to the coast, and many other modern improvements. Locate it. Rich gold fields are being developed near Pretoria and Johannesburg. Locate them. Rude agriculture, the preparing of natural commercial products, and stock-raising in some sections, are the principal occupations, except where the Europeans have improved the conditions.

#### PEOPLE.

Africa is the home of what race? What are its characteristics? What other race do you find? What religions are represented? How does the density of population compare with that of other continents? Where is it most dense? Least dense? Can you give any reason for this difference?

Africa is peopled by many tribes, descended from at least three distinct races, characterized by great differences in language, religion, and civilization. The northern part is peopled by dark-skinned Cau-

casians, the Arabs, Jews, and Berbers, the last being descendants of the Aryan Hamite group. The central and greater part is the home of a great number of negro tribes, many of whom are half-savage. Those of the healthful regions of the Sudan are superior in mind and in personal appearance to those of the coastal plains. As a rule, all are childish, lack originality and enterprise, and when left to themselves remain in a degraded state. They like foreigners, are easily led by people of higher culture, and are ready to adopt the customs and opinions of those with whom they live. This especially fits them for civilization.

The southern part is peopled by the Bantu group of the Aryans, which consists of many tribes with different dialects. These tribes are called Kaffirs by the colonists, and the Zulus are the most remarkable of the Kaffirs. The Bushmen are nomads inhabiting the Kalahari Desert, and are very low in the scale of civilization. A peculiar negro tribe, the Hottentots, live on the southwestern coast.

*Mohammedanism* has spread southward until it embraces nearly half of the continent. It has had a civilizing influence in suppressing cannibalism and developing a taste for clothing. The Abyssinians are Christians, so also are the colonists and many natives who have accepted Christianity in South Africa; in a few localities cannibalism still prevails; in others, horrible forms of paganism exist. Among most of the negro tribes, captives taken in war become slaves, and slave trade is carried on by the Arabs in the interior. From the western coast slaves were brought to the United States. When? By whom?

Through the enterprise of Europeans, several railroads have been constructed in the southeast, the northeast, the north, and on the western coast. Good roads have also been constructed in several localities by the same enterprise.

About one-fourth of Africa is under the control of the Europeans. Name and locate four sections belonging to Great Britain. Four to Germany. Four France. Three to Portugal. One to Spain. Locate the republic of Transvaal. The Orange Free State. Find out all you can of these republics.

## EGYPT.

Where is this country located? What waters border it? What countries border it on the west? What river crosses it? What mountain on a peninsula which is Egyptian territory at the head of the Red Sea? What important ship canal within its boundaries? Describe the surface. Tell all you can about the Nile. About the climate. The vegetation.

The population consists of Copts, the descendants of the ancient ruling people, Arabs, Turks, a few Europeans, and a large number of laborers composed of mixed negro and Arab blood. The Copts

are Christians; the prevailing religion is Mohammedan. The southern boundary is not well defined, though Egypt claims Nubia and Kardofan as belonging to British East Africa.

Egypt pays tribute to the Turkish Empire, but it has a nominal government under an absolute monarch, the Khedive, who is practically under the control of Great Britain.

Agriculture is the leading occupation, depending wholly upon a continuous system of irrigation. High levees have been constructed to confine the river during its flood time, and high-banked canals conduct the water to irrigating basins. Grains and beans are grown



A WELL OPERATED WITH OXEN. EGYPT.

but the more valuable crops are cotton, sugar-cane, and maize. Cattle, oxen, and sheep are raised. Most of the trade is with Great Britain. Raw cotton, cottonseed, beans, sugar, gums, and rice are exported. Cotton and woolen goods, coal, timber, coffee, and wines are imported.

The great center for foreign trade is *Alexandria*. Locate it. For three centuries it was the most important commercial city in the world, but it rapidly declined after it was conquered by the Romans, about 30 B. C. The European part of the town is well-built and clean; but the Turkish quarter is dirty and over-crowded.

Locate the capital, *Cairo*. Until recently it was not a desirable place in which to reside, because of the squalor, filth, and disease of the poorer district; but conditions have been improved; the city is more healthful; and there are

several fine streets, squares, and buildings in European style. The *great pyramids* are in the vicinity of this city, and many travelers visit here to see them, together with the tombs and ancient temples. All were constructed thousands of years ago, when Egypt was the center of the most progressive and civilized people in the world. There are numerous lines of railway, one ascending the left bank of the Nile to *Suit*.

*Khartum* is a great center of traffic both by the river and by caravans. Locate Port Said, Suez. *Port Said* owes its existence and importance to the



THE SPHYNX AND PYRAMIDS. EGYPT.

canal. The construction of the Suez Canal was an important event in the commercial history of the world. Why? Find out all you can about this canal.

## THE MEDITERRANEAN STATES.

What four states border the Mediterranean? Which is farthest east? Farthest west? Which is the smallest? Which are mountainous? Which is mostly a desert? Tell what you can of the climate; the vegetable, animal, and mineral products.

Name and locate the capital of each state. Which are seaports?

TRIPOLI is a Turkish possession, including Tripoli proper, Fezzan, and Barca. *Tripoli*, the only seaport of consequence, is the center of

a considerable caravan trade in ostrich plumes, ivory, and slaves from across the Sahara. It exports esparto grass and sponges.

ALGERIA and TUNIS are a part of the French territory, which extends southward across Sahara and Soudan. French enterprise has constructed thousands of miles of excellent roads and many

railroads. New land has been brought under cultivation by the sinking of artesian wells. The seaports of *Algiers* and *Tunis* export wheat, barley, olive-oil, and wool. What must be the imports?

Morocco is a Moham-  
medan empire ruled by a sultan, who regards all Christian nations with aversion, and discourages foreign commerce. There are no roads or wheeled vehicles, and no railroads. All transportation is on the backs of animals. Two ports, *Tangier* and *Mogador*, are open to European trade; the former is the most thriving, and the residence of the representatives of foreign powers. Native Jews have succeeded in bringing about some foreign commerce with France and England.



THE SUEZ CANAL.

## THE SAHARA.

Locate this region. Tell what lies south, east, north, and west of it? What plateau crosses it? In what part are the greatest inhabited areas? How does the Sahara compare with our country in size?

This great desert is interspersed with many fertile oases, some being of great extent and sparsely inhabited. By whom? How do they live? Date palms, olive trees, and grains are grown. Salt is the most important product of the desert and is an article of trade. Many caravans of camels, loaded with merchandise, cross this desert every year. The Arab merchants collect small wares, weapons, cloths, and trinkets from the Mediterranean coast, and they trade with the natives of Central Africa and the oases for ivory, ostrich plumes, gold dust, slaves, salt, and dates.



## CENTRAL, OR TROPICAL, AFRICA.

This section extends from the Sahara to the Zambesi River. What does it embrace? Describe the surface and drainage of this region. The climate, vegetation, and productions. The people. Where are most of the towns located? What does this tell us in regard to civilization?

This section yields least to commerce and is the least developed of any part of Africa. This is because of the unhealthful climate, except on some parts of the plateau, the defective river navigation, the generally non-fertile soil, and the limited area in which there is a strong, settled government. In the interior cannibalism is still practiced, and the Arab slave-dealer continues his horrible traffic, though he is coming into collision with the European civilization.



AN OSTRICH PARK.

European authority has been restricted generally to regions near the coast. This is the true home of the Negro race, which is massed in numerous tribes governed by their own chief or king. The eastern tribes are nomadic. The region in which civilization is most advanced and a settled government best established among the natives lies in the states in the Lake Tchad and Niger basins. Here millet (durra), maize, and cotton are grown; also the ox, camel, horse, and donkey. The people are expert in many handicrafts, including the working of brass and metals. In other parts of Central Africa, tropical fruits, cotton, sugar, rice, coffee, indigo, and tobacco may be raised, and the slopes of the highlands may serve as pasturage. Cattle, sheep, and horse rearing is prevented in a large part of this region because of the *tsetse fly*, whose bite is fatal to

these animals. Carriage ways and railroads are being introduced in a few localities. Palm-oil, ivory, oil-seeds, coffee, rubber gums, and some gold dust are the chief exports. Three-fourths of the ivory used in the world is obtained in Central Africa from the tusks and teeth of the elephant and hippopotamus of the forest regions.

Locate Timbuktu, Kano, El Fasher. These are the centers of an immense caravan trade from the interior to the coast.

LIBERIA, a negro republic, was formed for free slaves, by citizens of the United States, during the slavery period. What is its capital?

SIERRA LEONE, belonging to Great Britain, was formed as a refuge for slaves taken from vessels engaged in the slave trade. Name and locate its capital.

ABYSSINIA occupies a mountainous plateau which is the great rain-condenser for the Nile, but is of little commercial importance. The people profess Christianity, are engaged in horse, camel, and sheep raising and in trading. They are governed by a king, and have successfully resisted the Italians, who have tried to conquer them. When did this occur?

Most of the African interior has been explored and is claimed by Europeans. By them, under the King of Belgium as ruler, the KONGO STATE has been opened to the trade of all nations with equal rights and privileges. In time it must have a large commerce. Its principal trade centers are *Boma* and *Leopoldville*. Locate them.

Locate *Loanda*, *Mombasa*, *Zanzibar*. The last-named is an important trade center on an island off the east coast which has a native ruler, the sultan, controlled by Great Britain. What does Zanzibar produce for export?

## SOUTH AFRICA.

This region extends from the Zambesi southward to the coast. What does it embrace? Describe the surface and drainage. The climate and vegetation. The products. Where is the greatest rainfall? Where the least rainfall?

The greater part consists of British colonies, or is under British control. The ORANGE FREE STATE and the SOUTH AFRICAN REPUBLIC (TRANSVAAL) were settled by Boers, Dutch farmers; the former is an independent republic; the latter is under the control of Great Britain in its external affairs. BASUTO LAND is a British Crown colony. NATAL is a self-governing British colony. CAPE COLONY is a large self-governing British possession.

What nation claims the eastern coast? What one the western? Which has nature made the more desirable? In what sections is the population dense? Sparse? Why?

On the seaward slopes of the south and east are light forests of palm, rubber, olive, cypress, and northern pines. The uplands furnish fine pasturage for cattle, sheep, and Angora goats. Ostrich-farming is carried on to some extent. What minerals are in this

section? Which are most important? Locate them? What are the three principal occupations?

Most of the natives work for the colonists as laborers and servants, and have adopted the manners and customs of the white men; others have retired to the interior. The principal exports are diamonds and wool, and are of great value. Angora hair, ostrich feathers, skins, and gold are also exported. Trade is mostly with Great Britain. What are the imports?

Good carriage roads, and many miles of railway, have been constructed, and the towns are equipped with modern improvements: street-cars, electric lights, paved streets, water, and sewerage. Name and locate the capital of Cape Colony, of Natal, the Orange Free State, Transvaal, of Portuguese East Africa. Locate Port Nolloth, Port Elizabeth, Johannesburg.

*Cape Town*, on Table Bay, has a fine harbor and dock system and is a much frequented calling port. It has a university, an art gallery, botanical gardens, and a fine House of Parliament. A railway connects it with the British territory of the Zambesi basin.

*Port Elizabeth* is the principal seaport and trading center, with a population second to that of Cape Town.

*Port Nolloth* is connected with rich copper mines by a railroad worked by mules. *Johannesburg* lies in the heart of the gold-mining district. *Pretoria* and *Johannesburg* are connected with the southern and eastern coasts by railroad.

## AUSTRALIA.

### LOCATION AND COAST.

In what direction is Australia from Asia? What ocean west and south? What ocean east? What large gulf in the north? What strait between Australia and New Guinea? What bay in the south? What gulf indents the southern coast? What island southeast? What strait separates it? Name and locate five capes. Compare with the United States in area. Compare with Europe.

### SURFACE.

In what part are the Primary Highlands? What name is given to the chief range? Mt. Kosciusko, the highest peak, is only a little over 7000 feet high. What two ranges in the central part? Compare the surface of the eastern and the western parts. What river system drains the great plain? What is the chief tributary? What three lakes in the southern part? Locate Lake Amadeus. In what part are there numerous small lakes?

The surface of Australia gives evidence of being the most recent elevation of the continents from the sea-bed. Its climatic and drainage conditions are consequently not well established.

The Murray Basin is not a low plain, but is a vast undulating region with black, fertile soil. In good seasons it supplies abundant herbage and supports immense herds of sheep and cattle. In dry seasons it is withered and parched, and the animals die by the thousands.

Systems of irrigation have been introduced which promise to render its productiveness more uniform.

### CLIMATE.

Between what parallels of latitude does Australia lie? What city in the United States is about the same distance from the equator as Melbourne? What season are they having in Australia now? Which are their hottest and their coldest months? There is little rainfall in the interior. Why? How does the absence of rain affect the heat of this latitude? Long droughts and severe floods characterize the climate.

### LIFE.

The life of Australia is peculiar. The low tropical regions abound in forests. On the eastern coasts, immense trees are found which rival the "big trees" of California. One of these trees measured 90 feet in circumference 55 feet from the ground. The highlands are bare. About 10,000 species of plants have been

found, many of which are found nowhere else. There are no cereals and few fruits and edible roots among the native plants; but those of the temperate belt which have been introduced, produce well.

Marsupials are most numerous among mammals; the kangaroo, opossum, flying squirrel, and wild dog are found; but there are no native cud-chewers. The duck-billed platypus, forming a connecting link between animals and birds, is found only in Australia. Among about 700 species of birds, the emu and lyre-bird are characteristic.

#### OCCUPATIONS AND PRODUCTIONS.

Sheep-farming is the most widely extended industry, and wool is a staple export. Cotton, sugar, tobacco, and wheat are grown. What parts of the country do you think are adapted to each, and why?

Among the mountains, rich gold-fields abound. Extensive coal beds, and copper, iron, and lead districts exist.

*People.*—The original Australians somewhat resemble the Africans, though of lighter color. Their stage of civilization is very low.

The country is being rapidly settled by colonists from Great Britain. Australia comprises five British colonies. Name them.

Bound VICTORIA. What part is mountainous? What part low-land? Name and locate the capital.

Victoria is the first of the Australian provinces in the production of gold. The climate is warm. The coast has a plentiful rainfall. Snow falls in the mountains in winter, but has been known in Melbourne only twice. Rich forests abound and the crops of the Temperate Zone are raised.

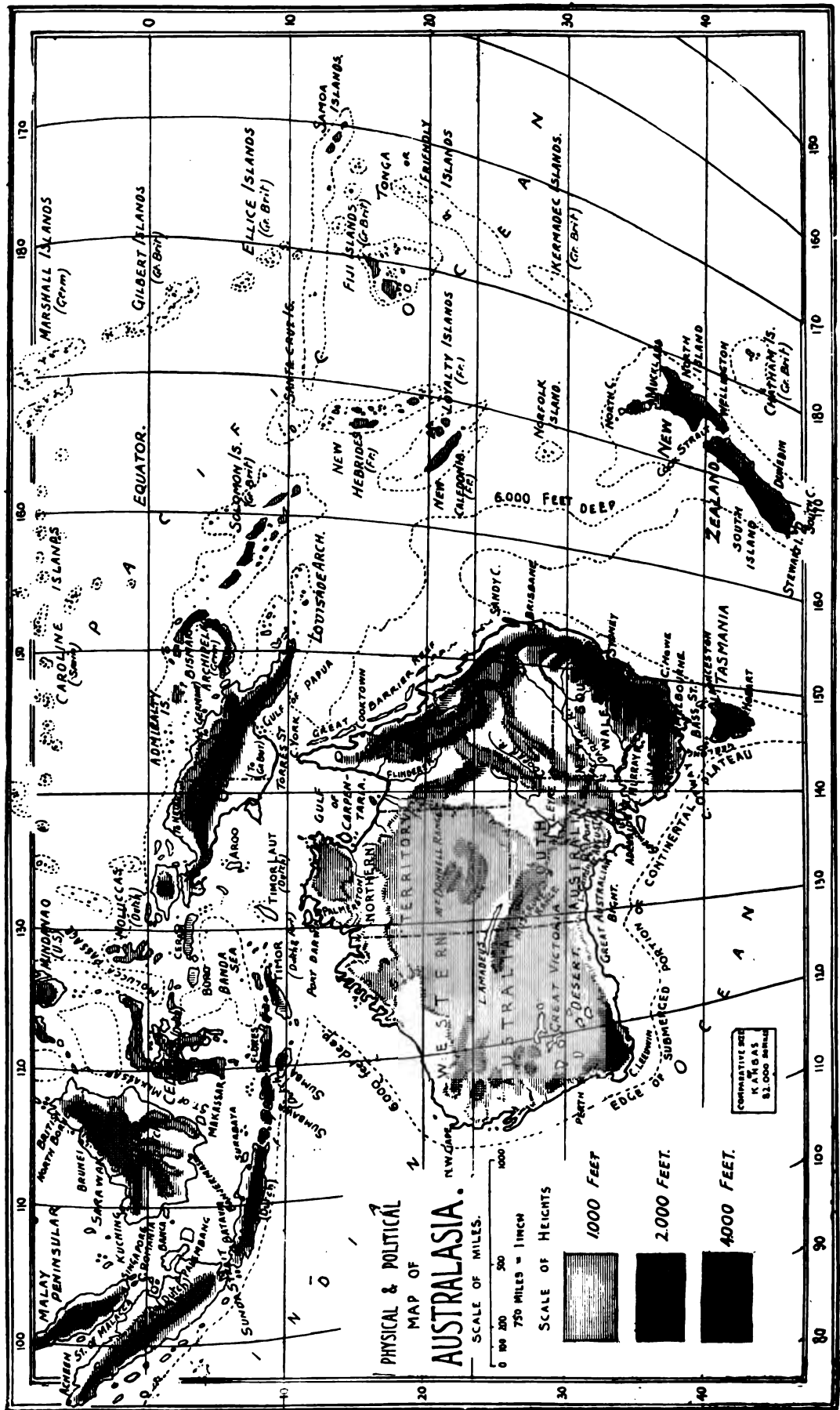
Victoria must import woollen and cotton goods, tea and sugar, coal, iron, and steel, many of which come from the United States. Exports are wool, gold, and wheat, which are sent mostly to England.

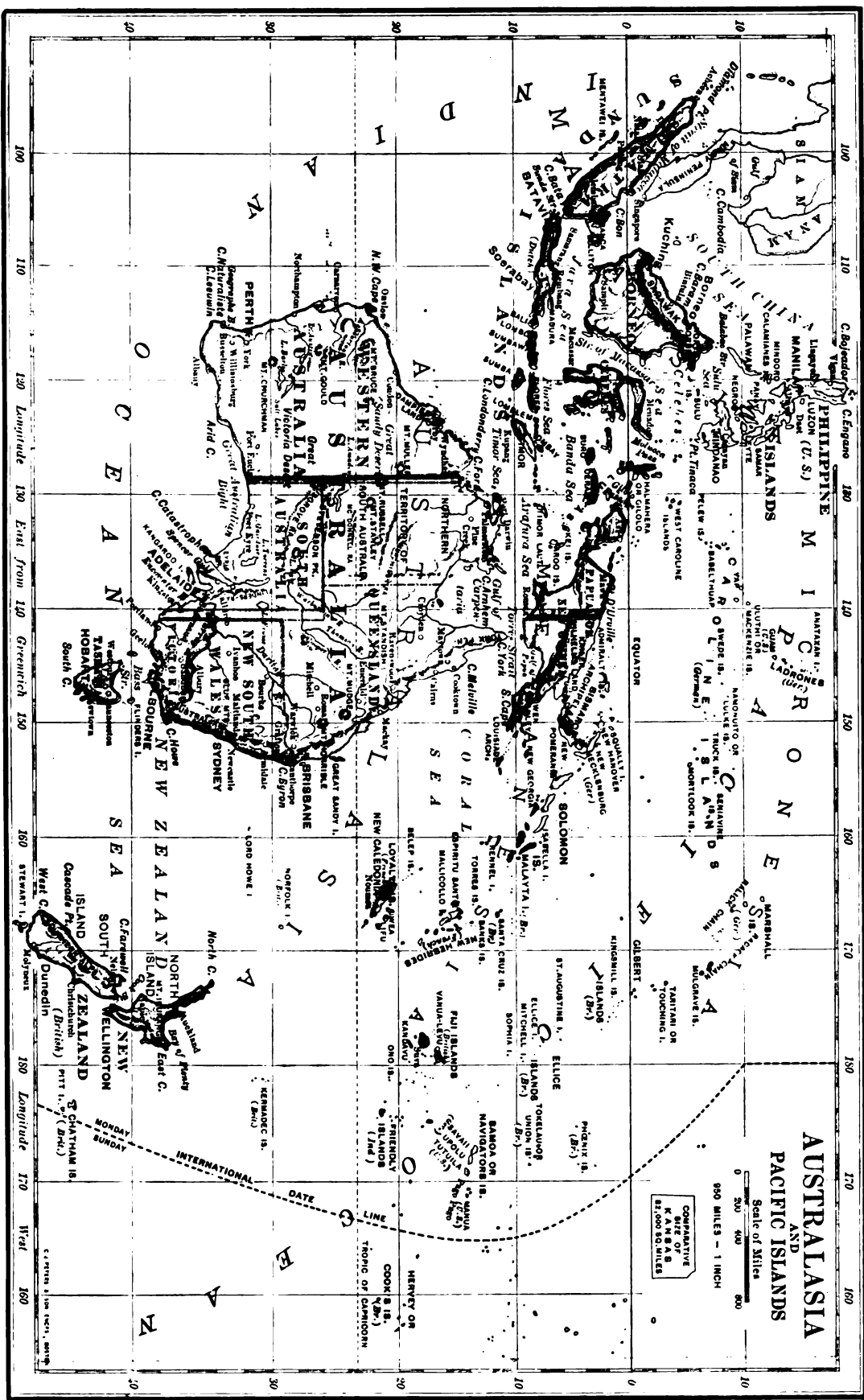
*Melbourne* has a fine location and is the center of the gold-mining industries. It has many fine buildings, a large public library, a university, and good public schools. What city in the United States about equal in population?

Bound NEW SOUTH WALES. Name and locate its capital. Describe its surface. The principal occupations are mining and grazing. Gold, tin, and coal are the principal minerals. Precious stones are found. Agricultural products are insufficient for home supply. From whence can they be imported?

*Sydney* is nearly as large as Melbourne. It has a magnificent harbor, is the seat of a university of high rank, and has many magnificent buildings and extensive manufactories.

Bound QUEENSLAND. Name and locate the capital. Describe its surface. Describe its climate. The grains and fruits of our country are grown upon the highlands; tropical fruits, upon the coast; the









sugar plantations are extensive in the lowlands. Grazing is important in the highlands, which are also rich in minerals. Gold production almost equals that of Victoria.



A SOUTH AUSTRALIAN.

About ten million acres of coal-beds exist. Iron, copper, and tin also abound. What does the existence of coal and iron together promise for the future of this province?

**Bound SOUTH AUSTRALIA.** Name and locate the capital. Describe its surface. What ranges of temperature must it have? The annual rainfall in the interior is only about 5 inches; it is about 20 inches on the southern coast, and about 60 inches at the north. Explain. The most important mineral product is copper.

Agriculture is the leading occupation. Irrigation is needed to develop the soil in the interior.

*Adelaide* is connected by a telegraphic line across the continent, to Port Dawson, where connection is made with a cable to India and Europe.

By what direct route would you go from Melbourne to San Francisco? From Melbourne to London? To Liverpool? At what coaling and supply stations would you call *en route*? How would you go from Adelaide to New York? To Cape Town? To Valparaiso? From Sydney to St. Petersburg? To New Orleans? To Khartum? To Vienna? To Chicago? To Montreal? Tell what products or manufactures would be exchanged in each case. What people would you see?

## NEW ZEALAND.

### LOCATION.

In what direction and at what distance is New Zealand from Australia? What is its latitude? What its longitude? Name the two main islands. What strait separates them? What small island south of South Island? In what direction do the islands extend? Through about how many miles? About how wide are they? What State of the Union about equal in size? These islands are as large as New York, Pennsylvania, and New Jersey combined.

### SURFACE.

A mountain range extends throughout the length of the two large islands. In North Island the elevation is about equal to the Appalachian Highlands (6000 feet). In South Island many of the mountains rise to the height of the Rockies, are covered with perpetual snow, and are the source of glaciers which descend to 1000

feet above sea-level. Several of these mountains are extinct volcanoes, and one is occasionally active. In the northeastern part of North Island is a group of eight geysers, one of which throws a



PUBLIC SCHOOL, MELBOURNE, AUSTRALIA.

column of water 35 to 40 feet high. Much of the mountainous part of the islands is adapted to pasturage. Where are the most extensive plains?

#### CLIMATE.

Compare the latitude of New Zealand with that of your own locality. What seasons does it have? What are the prevailing winds? Gales are frequent. How do these winds affect the climate? How is the climate affected by ocean currents? Which island receives a warm current? Which a cold current?

#### OCCUPATIONS AND PRODUCTIONS.

New Zealand is rich in minerals; the most important are gold, coal, and kauri gum. The last-named is a plant product hardened to a mineral and is peculiar to New Zealand; it is used in making fine varnishes.

The forest wealth of New Zealand is great; the most valuable tree is the kauri, the wood of which is used for spars.

Agriculture and stock-raising are important occupations. The crops of the Temperate Zones are grown.

CITIES.

Locate Auckland, Wellington, Dunedin. What is the capital? Each, with suburbs, contains about 50,000 people.



A NATIVE ISLANDER AND BOAT.

OTHER ISLANDS OF THE SOUTH PACIFIC.

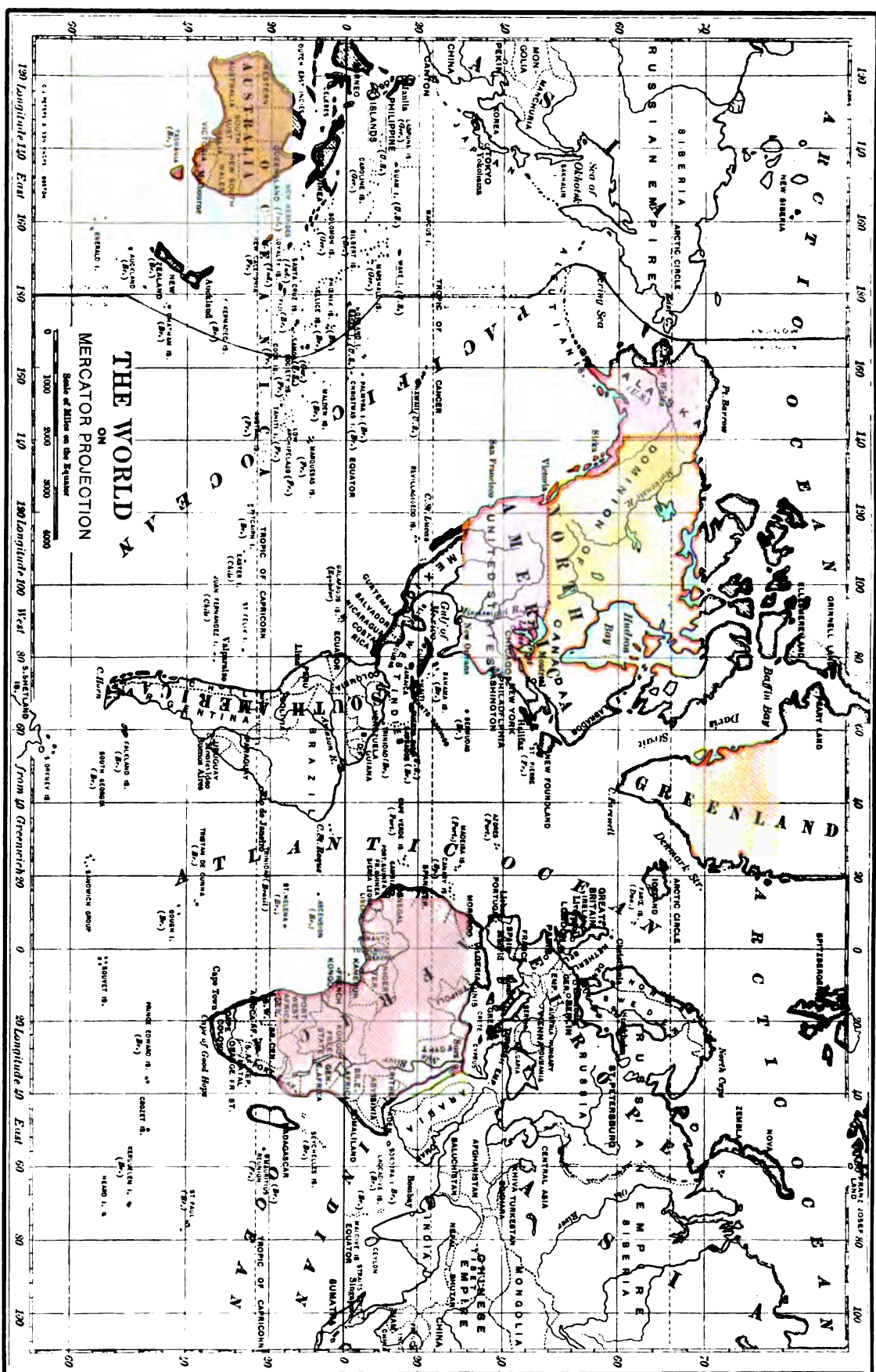
What island east of Australia belonging to France? It is about the size of New Jersey. It is rich in minerals—nickel, iron, copper, tin, platinum, and mercury.

What group of islands is crossed by the International Date Line? To what country do they belong? This group contains about two hundred islands, the largest of which is larger than the State of Delaware. They have a very fertile soil and a luxuriant vegetation. Cotton grows wild. They contain many volcanoes, have numerous earthquakes and periodical hurricanes.

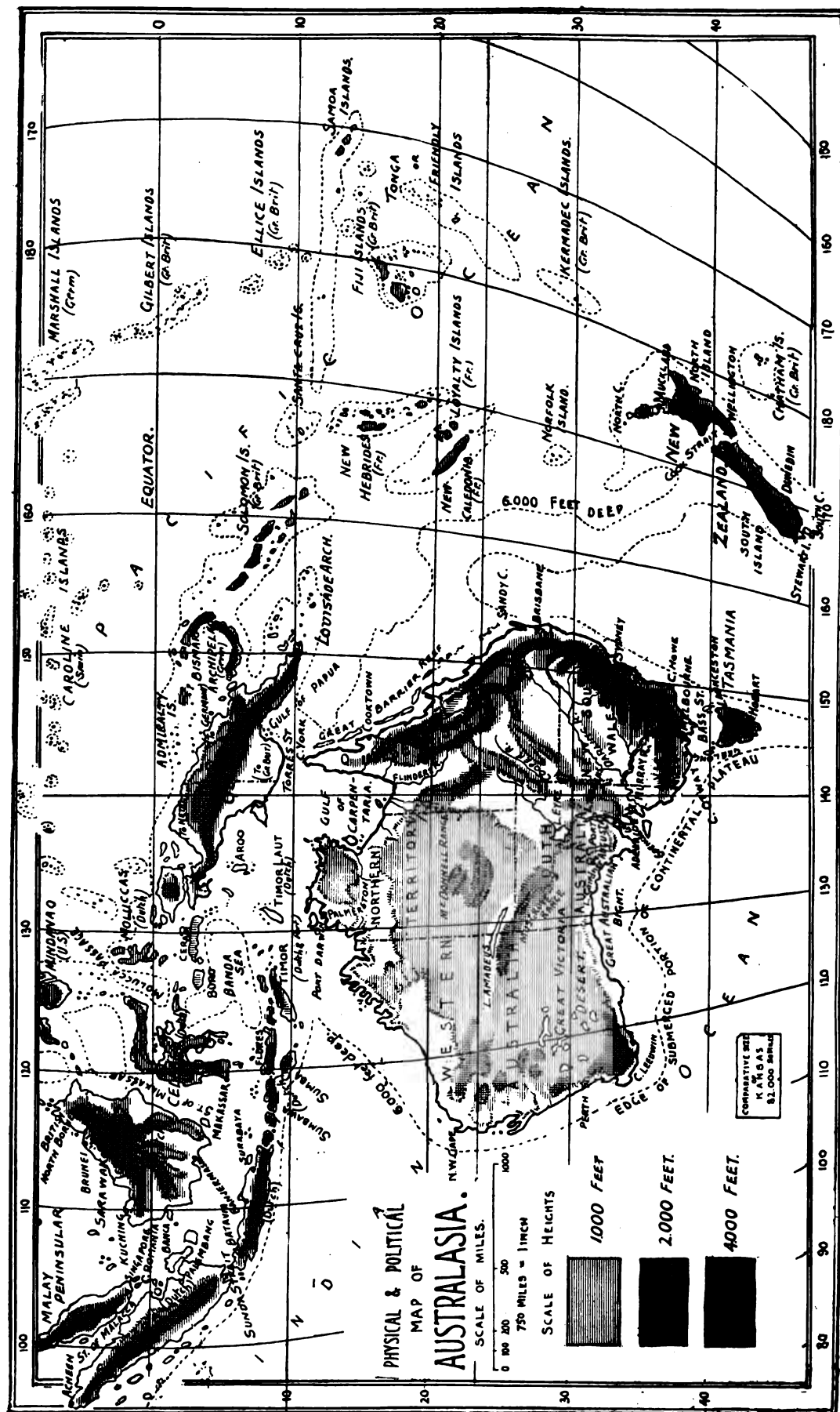
What islands northeast of the Fiji Islands? These islands, fourteen in number, form an independent kingdom recognized by Germany, England, and the United States, each of which maintains a coaling station on the islands. *Apia*, the chief town, is a municipality governed by the consuls of the three nations named above.

What islands southeast of the Fiji Islands? In what direction are they from Samoa?

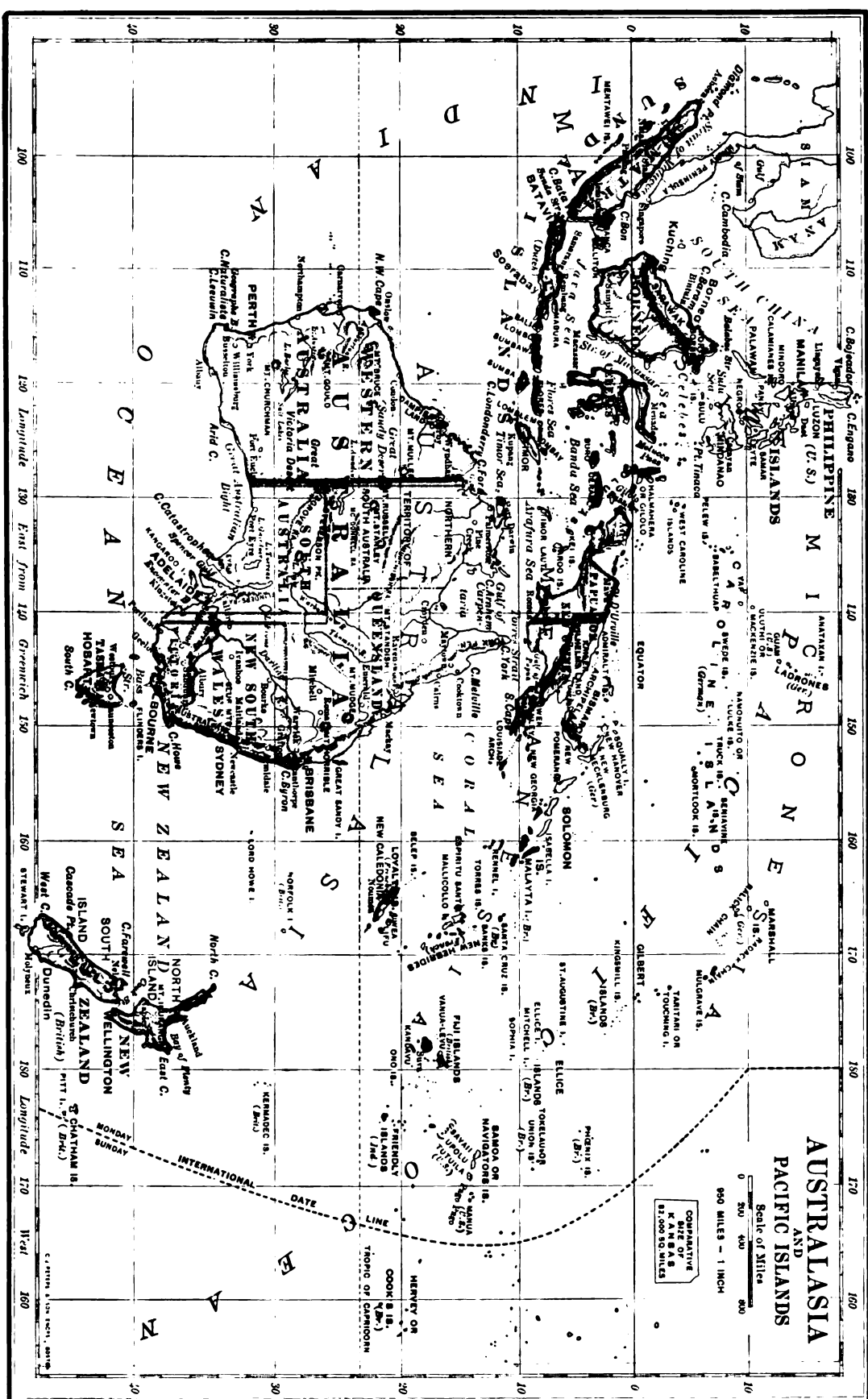
What long group of about five hundred islands north of New Guinea? To what country do they belong? What group north of these belonging to the same country (see map of Islands of the Pacific Ocean)? Only four of the fifteen islands are inhabited. What other country owns one of these islands? What is the name of the island? These two groups of islands, with the exception of Guam, were purchased by Germany in June, 1899.

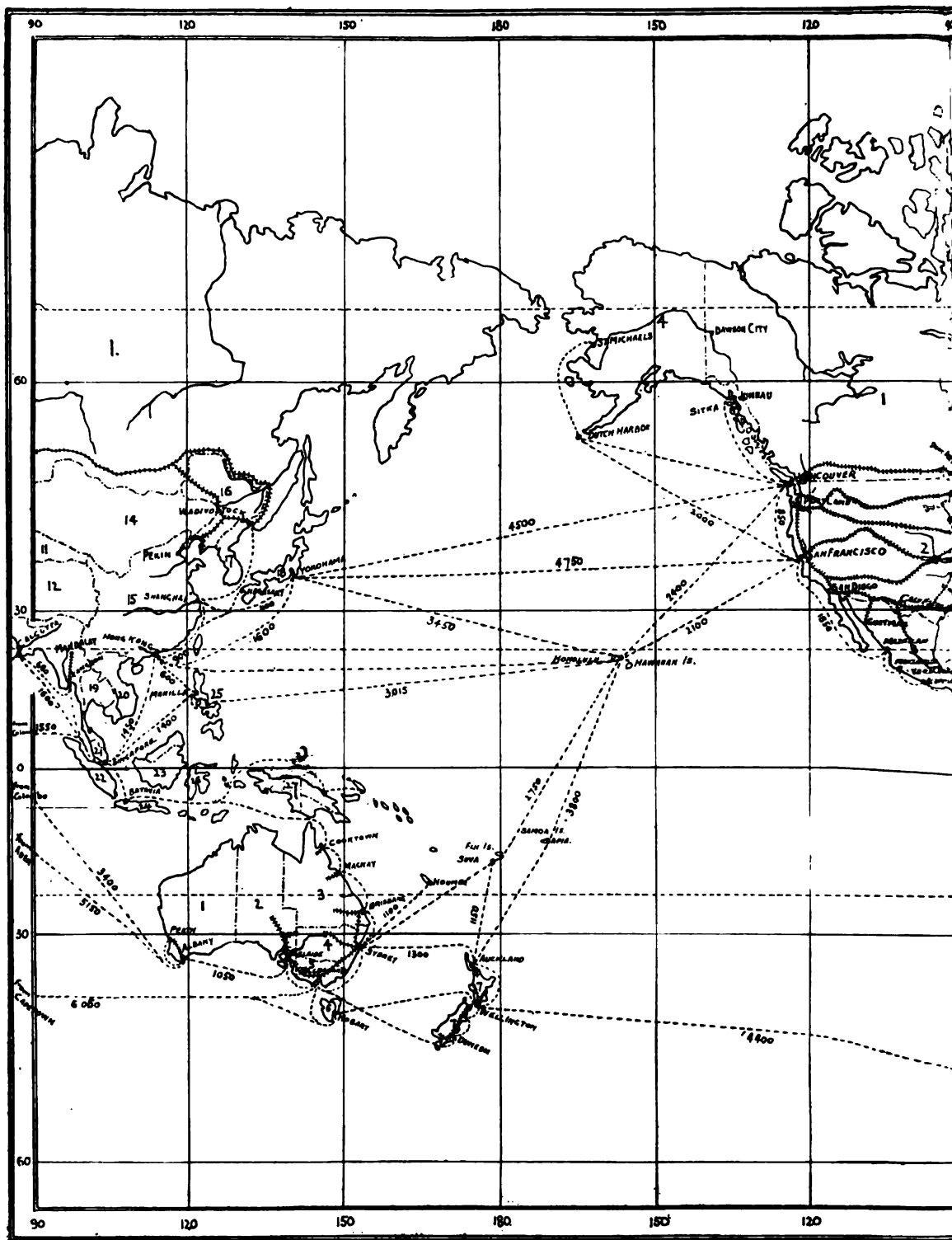


# General Review and Supplement.









# KEY TO COUNTRY

- AMERICA.**
1. Canada.
  2. United States.
  3. Mexico.
  4. Alaska.
  5. Greenland.
  6. Iceland.
  7. Guatemala.
  8. Haiti.
  9. Honduras.
  10. Salvador.
  11. Nicaragua.
  12. Costa Rica.
  13. Colombia.
  14. Venezuela.

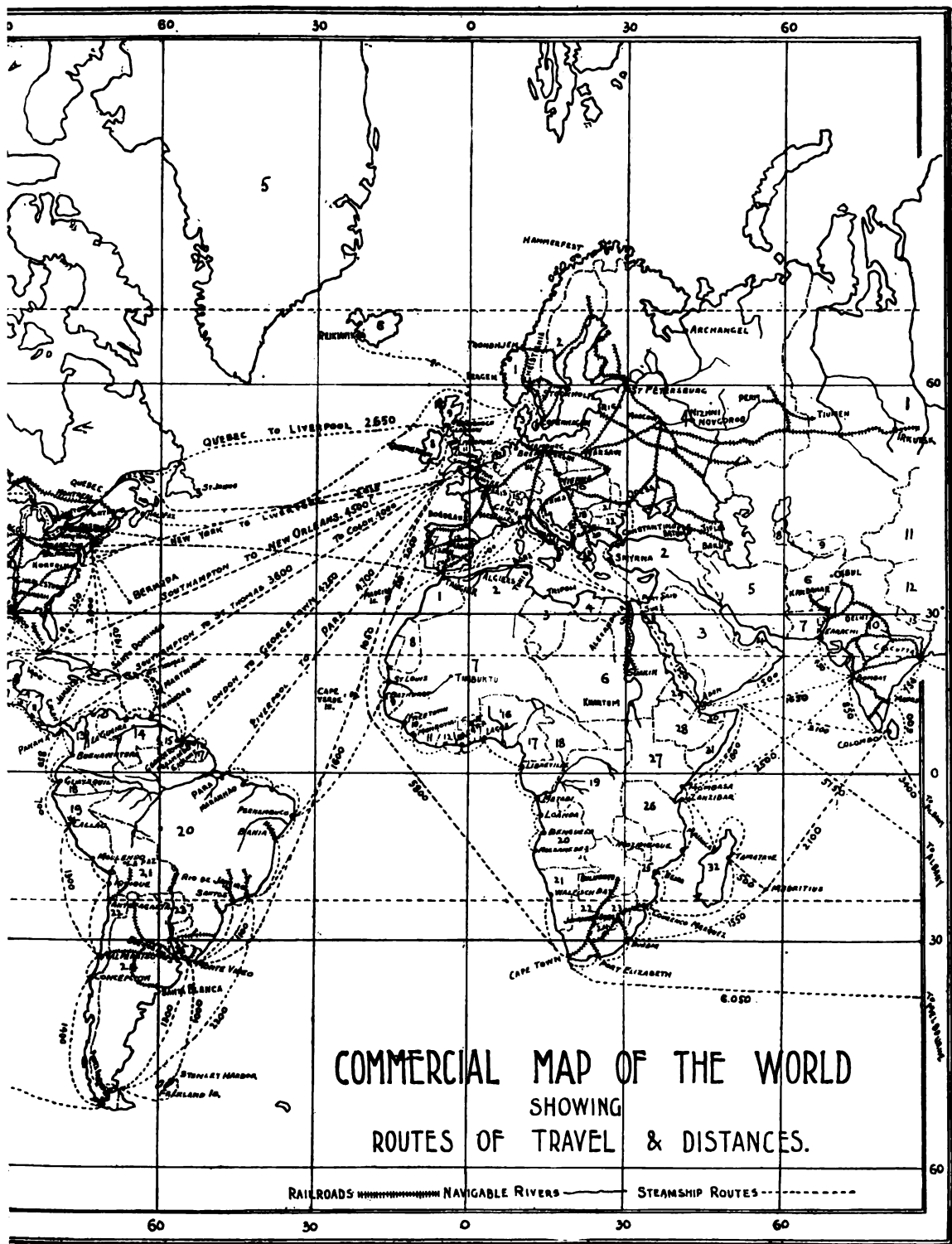
15. British Guiana.
  16. Dutch Guiana.
  17. French Guiana.
  18. Ecuador.
  19. Peru.
  20. Brazil.
  21. Bolivia.
  22. Chili.
  23. Paraguay.
  24. Argentina.
  25. Uruguay.
- EUROPE.**
1. Norway.
  2. Sweden.

3. Denmark.
4. Russia.
5. Holland.
6. Belgium.
7. France.
8. Ireland.
9. Scotland.
10. Wales.
11. England.
12. Portugal.
13. Spain.
14. German Empire.
15. Switzerland.
16. Austria-Hungary.
17. Italy.
18. Servia.

19. Montenegro.
20. Turkey.
21. Roumania.
22. Bulgaria.
23. Greece.

## ASIA.

1. Siberia.
2. Asia Minor.
3. Arabia.
4. Oman.
5. Persia.
6. Afghanistan.
7. Beluchistan.
8. Khiva.



**OF COMMERCIAL MAP.**

9. Bokhara.
10. India.
11. Chinese Turkestan.
12. Tibet.
13. Nepal.
14. Mongolia.
15. China.
16. Manchuria.
17. Korea.
18. Japan.
19. Siam.
20. French Indo-China.
21. Straits Settlements.
22. Sumatra.
23. Borneo.
24. Java.

25. Philippines.
26. Celebes.
27. New Guinea.

**AFRICA.**

1. Morocco.
2. Algeria.
3. Tripoli.
4. Barca.
5. Egypt.
6. British Sudan.
7. French Sudan.
8. Spanish Africa.
9. Gambia.
10. Sierra Leone.

11. Liberia.
12. Ivory Coast.
13. Gold Coast.
14. Togoland.
15. Dahomey.
16. Niger Territory.
17. Kamerun.
18. French Kongo.
19. Kongo State.
20. Portuguese West Africa.
21. German S. W. Africa.
22. British South Africa.
23. Transvaal.
24. Orange Free State.
25. Portuguese East Africa.
26. German East Africa.

27. British East Africa.
28. Abyssinia.
29. Eritrea.
30. British Somaliland.
31. Somaliland.
32. Madagascar.

**AUSTRALIA.**

1. Western Australia.
2. Southern Australia.
3. Queensland.
4. New South Wales.
5. Victoria.
6. Tasmania.
7. New Zealand.

In what countries is there little or no mining? What are some of the reasons for this? By what means are most of the mine products transported? Name some of the manufactures from each mineral. Where are the great iron and steel industries located? Why is it important that coal and iron should be in close proximity? What countries export coal? What ones import it? What ones import iron manufactures?

#### MANUFACTURING.

What is manufacturing? Name two kinds. In what countries are most of the manufactures hand-made? In what countries is machinery used? What are the differences in time, skill, and results? Locate the great manufacturing sections, and the raw material producing sections of the world? In what localities is careful attention given to technical education? With what result? What schools are being established in the United States for the training of the hand with the brain? What cities have these schools? With what results? Make a list of manufactured products. Tell what city or cities is noted for each manufacture. Make a list of all the occupations of which you know anything. Upon what does each depend?

#### CITIES.

Name and locate the ten largest cities of the world. Tell what made them large. Name, locate, tell for what noted, ten cities in the United States; five in Canada; three in Mexico; two in Cuba; ten in South America; ten in Europe; ten in Asia; two in Australia. Which are sea or river ports? Locate the great shipyards of the world.

#### PEOPLE AND COUNTRIES.

What three races of people are represented in the world? Describe and locate each. What regions are most densely settled? Sparsely settled? What regions have no known inhabitants? Give reasons for the differences in population. What nations are closely allied in language? Describe and locate the religions of the world. Describe the different forms of government. Make a list of the countries of each continent, stating the government and capital of each.

Make lists of the foreign possessions of the United States, Great Britain, and France, the products, people, population, and commercial importance of each. Tell how each is governed. Which countries have great numbers of railroads? Which have few or no railroads? Why? Which have good roads? Which have only caravan tracks? What countries use few or no carriages? No horses? What are the beasts of burden in the cold regions; in the hot regions; for mountain climbing? Describe the manners and customs of people in different sections of the world by telling of their clothing, food, homes, schools, religion, games, children's toys, pets, ways of travel and trade, ways of getting a living, etc.

What countries lead in the civilization of the world? In what climatic belt are these countries? Tell how the climate affects civilization.

#### COMMERCE.

What is commerce? Describe two kinds. In what three ways is trade chiefly carried on? What are some of the great caravan routes; the great railways; the great water-routes of the world? How and for what in exchange would you ship a cargo of wheat from Chicago to Odessa? St. Petersburg? Manila? Yokohama? By what route and what goods would you carry each way from London to Port Elizabeth? From Montreal to Hongkong? From London to Sydney? To Rio Janiero? From Southampton to New Orleans? From London to Georgetown? What is the shortest route from Quebec to Liverpool? From Liverpool to Hongkong? How would you go from St. Petersburg to Vladivostock? To Pekin? Name a route and articles of exchange from San Francisco to Dawson City? To Auckland? To Singapore? To Calcutta? From Vienna to Catania, Sicily? From Duluth to Liverpool? From Guaymas to Portland?

Give a description of journeys or routes of trade in all parts of the world.

Locate the principal military stations of the world. Compare the armies of different countries; the navies of different countries. Locate the navy yards of the United States. Tell which are most important at all times. Locate the principal navy yards of Great Britain; Germany; Russia; France.

# SUPPLEMENT.

## THE EARTH'S AREA AND POPULATION.

### THE EARTH'S DIMENSIONS.

Equatorial diameter,	7,926	miles.
Polar,	7,900	"
Equatorial Circumference,	24,900	"
Earth's Surface, about,	194,000,000	square miles.
Pacific Ocean,	71,000,000	square miles.
Atlantic, "	84,000,000	" "
Indian, "	28,000,000	" "
Antarctic, "	7,500,000	" "
Arctic, "	4,000,000	" "
Total Ocean Surface,	144,500,000	" "

	Area in Sq. Miles.	Population.
North America,	8,600,000	100,089,924
South America,	7,885,400	38,085,608
<i>Western Hemisphere,</i>	16,485,400	138,175,527
Europe,	4,022,234	365,436,581
Asia,	16,698,198	818,769,630
<i>Eurasia,</i>	20,720,432	1,184,206,211
Africa,	11,514,985	168,497,091
Australia,	510,874	5,683,968
<i>Eastern Hemisphere,</i>	32,746,291	1,858,387,270
South Polar Lands,	260,600	
<i>Land Surface of the Earth,</i>	49,492,291	1,496,562,797

### NORTH AMERICA.

	Area in Sq. Mi.	Population.		Area in Sq. Mi.	Population.
Greenland,	47,000	10,516	<i>British America,</i>	8,777,550	5,034,579
Iceland,	40,426	70,927	French Is.,	91	5,983
<i>Danish America,</i>	87,426	81,443	<i>United States,</i>	3,668,167	73,531,785
Nova Scotia,	20,907	450,523	<i>Mexico,</i>	751,584	12,578,861
New Brunswick,	27,960	321,294	<i>Central America,</i>	179,730	3,010,324
Prince Edw. I.,	2,133	109,088	Cuba Group,	45,384	1,521,700
Quebec,	193,367	1,488,586	Haiti and San		
Ontario,	228,001	2,112,989	Domingo,	28,249	1,570,000
Manitoba,	65,988	154,443	Jamaica,	4,193	695,865
Brit. Columbia,	384,996	92,767	Porto Rico,	3,668	900,000
Districts,	2,166,999	99,722	Bahama Is.,	5,612	54,300
Arctic Islands,	502,368	956	Other Islands,	5,341	1,089,200
Part of Gr. Lakes,	27,094		<i>West Indies,</i>	92,955	5,831,065
<i>Do. of Canada,</i>	3,614,813	4,830,368	Bermuda Is.,	22	15,884
Newfoundland,	42,732	200,000			
East Labrador,	120,005	4,211			

### EUROPE.

England,	50,823	27,482,104	Ger. Empire,	209,995	49,424,135
Wales,	7,363	1,518,915	Luxemburg,	999	211,088
Scotland,	30,463	4,033,103	Netherlands,	12,742	4,558,095
Ireland,	32,531	4,706,162	Switzerland,	15,781	2,933,334
Isle of Man,	227	55,598	Swiss Lakes,	432	
Channel Is.,	76	92,273	Austria,	115,910	23,835,261
<i>Brit. Isles,</i>	121,483	37,888,155	Hungary,	125,614	17,449,705

EUROPE—*Continued.*

	Area in Sq. Mi.	Population.		Area in Sq. Mi.	Population.
Bosnia, etc., . .	19,734	1,336,091	Maderia Is., . .	815	133,955
Liechtenstein, . .	61	9,593	Italy Prop., . .	91,421	26,146,414
<i>Aus. Hungary,</i> . .	261,319	42,630,650	Sicily, . .	9,939	3,285,472
Norway, . .	125,598	1,999,176	Sardinia, . .	9,297	726,522
Sweden, . .	173,974	4,774,409	<i>Italy,</i> . .	110,657	30,158,408
<i>Scandinavia,</i> . .	299,572	6,773,585	San Marino, . .	28	7,920
Denmark, . .	14,780	2,172,205	Malta, . .	125	174,621
Faroe Islands, . .	515	12,954	Greece, . .	25,143	2,217,000
Belgium, . .	11,374	6,093,796	Turk. in Europe, . .	67,918	5,753,000
France, . .	207,166	38,218,903	Crete, . .		370,000
Monaco, . .	8	13,804	Bulgaria, . .	37,322	3,154,375
Andorra, . .	175	6,000	Montenegro, . .	3,506	200,000
Spain, . .	191,994	17,246,688	Servia, . .	18,576	2,157,477
Gibraltar, . .	2	24,696	Roumania, . .	50,589	5,000,000
Portugal, . .	34,508	4,308,554	Russia in Eur., includ-		
Azores, . .	922	269,401	ing Transcaucasia, . .	2,278,138	103,326,282
			Spitzb'rg'n, etc., . .	46,160	

## SOUTH AMERICA.

Colombia, . .	513,900	4,000,000	Argentina, . .	1,778,195	3,954,911
Venezuela, . .	598,943	323,527	Chile, . .	299,626	3,300,000
Guiana (Brit.), . .	88,652	285,315	Bolivia, . .	515,156	2,019,549
" (Dutch), . .	46,060	66,038	Peru, . .	439,014	3,000,000
" (French), . .	30,465	25,798	Ecuador, . .	115,680	1,234,361
Brazil, . .	3,288,452	16,300,000	Galapagos Is., . .	2,966	204
Paraguay, . .	97,726	730,000	Falk. Isl., etc., . .	6,574	1,992
Uruguay, . .	68,999	843,408			

## ASIA.

Arctic Islands, . .	14,904		Cochin China, . .	22,974	1,914,000
Siberia, . .	4,821,951	4,314,000	Cambodia, . .	38,612	1,000,000
Kirghiz Steppe, . .	729,640	1,901,000	<i>French Pos'ns,</i> . .	278,095	19,197,000
Russian Turk., . .	649,145	3,456,000	Siam, . .	220,000	9,000,000
Aral & Caspian, . .	195,532		China Proper, . .	1,532,920	347,000,000
Khiva, . .	23,167	500,000	Manchuria, . .	363,721	7,000,000
Bokhara, . .	79,154	1,250,000	Mongolia, . .	1,093,094	1,850,000
<i>Russia in Asia,</i> . .	6,308,057	11,421,000	Chinese Turk., . .	550,602	1,000,000
Isl. of Cyprus, . .	3,707	209,291	Tibet, . .	738,254	1,650,000
Turkey in Asia, . .	709,360	15,479,147	<i>Chinese Emp.,</i> . .	4,278,591	353,500,000
Ind. Arabia, . .	894,290	1,142,000	Hongkong (Gr B.), . .	31	195,000
Oman, . .	64,984	1,000,000	Macao (Port.) . .	5	71,000
Aden, Gr. B., . .	7,998	130,000	Korea, . .	84,424	10,519,000
Persia, . .	635,161	7,600,000	Japanese Emp., . .	160,969	43,072,020
Afghanistan, . .	239,788	4,600,000	Sun'atra Group, . .	180,407	3,783,000
Beluchistan, . .	166,802	1,020,000	Java Group, . .	50,864	22,818,000
India Proper, . .	1,411,536	278,582,000	Borneo Group, . .	284,375	1,740,000
Burma, . .	288,410	9,604,000	Celebes Group, . .	77,274	1,500,000
Ceylon, . .	24,818	3,038,000	Moluccas, . .	20,439	375,000
Straits Sett'l's, . .	34,750	1,158,000	Philippine Is. . .		
<i>Brit. India, etc.,</i> . .	1,779,514	292,382,000	(U. S.), . .	114,361	7,000,000
Nepal, Bhutan, . .	84,173	3,260,000	Caroline Is., Ger., . .	560	36,000
Port. India, . .	1,412	514,000	Ladrone Is., Ger., . .	417	10,172
French India, . .	197	283,000	Other Islands, . .	45,181	2,196,000
Tonkin, . .	92,705	10,000,000	<i>As. East Indies,</i> . .	773,828	39,458,172
Anam, . .	123,607	6,000,000			

## AFRICA.

Morocco, . .	313,643	8,016,000	Egypt Proper, . .	361,134	6,818,000
Algeria, . .	257,578	3,855,000	Eg. Sudan, etc., . .	758,949	10,830,000
Tunis, . .	44,906	1,500,000	Sahara, . .	2,386,352	2,500,000
Tripoli, . .	399,012	1,000,000	Abyssinia, . .	196,147	4,500,000

## AFRICA—Continued.

	Area in Sq. Mi.	Population.		Area in Sq. Mi.	Population.
Somali Land,	812,620	13,092,000	Cape Colony,	222,422	1,525,739
Western and Central Sudaw,	2,210,399	76,334,000	Other Brit. S. Africa,	766,572	2,695,261
Kongo State,	865,383	14,100,000	Madagascar,	229,328	3,582,600
Port S. Af.,	826,886	13,200,000	Isl. of Ind. O.,	8,777	557,300
German S. Af.,	691,272	3,100,000	Canary Islands,	2,944	287,728
S. Afr. Repub.,	113,684	679,000	Cape Verde Is.,	1,487	110,926
Orange Fr. St.,	50,465	208,000	S. Atlantic Is.,	126	5,587

## AUSTRALIA, ETC.

Victoria,	88,451	1,140,000	Australia,	2,945,229	3,073,000
N. S. Wales,	308,563	1,132,000			
Queensland,	668,259	393,000	Tasmania,	26,215	156,622
S. Australia,	904,133	320,000	N. Guinea Gr.,	311,965	837,000
W. Australia,	975,824	50,000	N. Zealand Gr.,	104,663	673,500
Natives,		33,000	Hawaiian Is.,	6,587	12,050
			Small Pac. Is.,	61,464	851,796

## UNITED STATES. AREA AND POPULATION.

	Area in Sq. mi.	Population, 1900.		Area in Sq. mi.	Population, 1900.
Alabama,	52,250	1,828,697	Pennsylvania,	45,215	6,301,865
Arkansas,	53,850	1,311,564	Rhode Island,	1,250	428,556
California,	158,360	1,485,053	S. Carolina,	30,570	1,340,312
Colorado,	103,925	539,700	S. Dakota,	77,650	401,559
Connecticut,	4,990	908,355	Tennessee,	42,050	2,022,723
Delaware,	2,050	184,735	Texas,	265,780	3,048,828
Florida,	56,680	528,542	Utah,	84,970	276,565
Georgia,	59,475	2,216,329	Vermont,	9,565	343,641
Idaho,	84,800	161,771	Virginia,	42,450	1,854,184
Illinois,	56,650	4,821,550	Washington,	69,180	517,672
Indiana,	36,350	2,516,463	W. Virginia,	24,780	958,900
Iowa,	56,025	2,251,829	Wisconsin,	56,040	2,068,963
Kansas,	82,080	1,469,496	Wyoming,	97,890	92,531
Kentucky,	40,400	2,147,174	Delaware, Raritan, and New York Bays,	720	
Louisiana,	48,720	1,381,627	Alaska Ter.,	577,390	44,000
Maine,	33,040	694,366	Arizona Ter.,	113,020	122,212
Maryland,	12,210	1,189,946	Dist. of Col.,	70	278,718
Massachusetts,	8,315	2,805,346	Hawaii,	6,640	154,001
Michigan,	58,915	2,419,782	Ind. Ter.,	31,400	391,960
Minnesota,	83,365	1,751,395	New Mexico Ter.,	122,580	193,777
Mississippi,	46,810	1,551,372	Oklahoma Ter.,	39,080	398,245
Missouri,	69,415	3,107,117	Part Gt. Lakes,	65,177	
Montana,	146,080	243,289			
Nebraska,	77,510	1,068,901			
Nevada,	110,700	42,334			
New Hampshire,	9,305	411,588			
New Jersey,	7,815	1,883,669			
New York,	49,170	7,268,009			
N. Carolina,	52,250	1,891,992			
N. Dakota,	70,795	819,040			
Ohio,	41,060	4,157,545			
Oregon,	96,030	413,532			
			Total for U. S.,	3,668,167	76,295,220
			Porto Rico,	3,668	900,000
			Philippines,	114,000	8,000,000
			Guam,		10,000
			Cuba, under the Protec- tion of U. S.,	44,000	1,634,000

## POPULATION OF FOREIGN CITIES.

Aberdeen, Scotland,	124,943	'91	Asuncion, Paraguay,	45,000	'91
Adelaide, Australia,	144,352	'95	Athens, Greece,	111,486	'96
Alexandria, Egypt,	320,000	'97	Auckland, N. Zealand,	57,516	'98
Algiers, Algeria,	92,120	'96	Bagdad, Turkey,	145,000	'91
Allahabad, India,	175,246	'91	Bahia, Brazil,	200,000	'92
Amsterdam, Neth.,	494,189	'96	Baku, Transcaucasia,	112,253	'97
Antwerp, Belgium,	267,902	'96	Bangalore, India,	180,366	'91
Arequipa, Peru,	35,000	'91	Bangkok, Siam,	200,000	'90



POPULATION OF FOREIGN CITIES—*Continued.*

Barcelona, Spain, . . . . .	272,481	'87	Hague, Netherlands, . . . . .	191,530	'96
Basel, Switzerland, . . . . .	89,689	'97	Haiderabad, India, . . . . .	415,039	'91
Batavia, Java, . . . . .	114,566	'95	Halifax, Can., . . . . .	38,556	'91
Beirut, Turkey, . . . . .	120,000	'90	Hamburg, Germany, . . . . .	625,552	'95
Belfast, Ireland, . . . . .	255,950	'91	Hamilton, Canada, . . . . .	48,980	'91
Belgrade, Servia, . . . . .	59,494	'97	Hangchau, China, . . . . .	700,000	'96
Benares, India, . . . . .	219,467	'91	Hankau, China, . . . . .	800,000	'96
Bergen, Norway, . . . . .	52,803	'91	Havana, Cuba, . . . . .	220,000	'98
Berlin, Germany, . . . . .	1,677,804	'95	Havre, France, . . . . .	119,470	'96
Bern, Switzerland, . . . . .	49,030	'97	Hobart, Tasmania, . . . . .	36,690	'95
Bilbao, Spain, . . . . .	50,772	'87	Honolulu, Hawaiian Is., . . . . .	29,920	'97
Birmingham, Eng., . . . . .	501,241	'96	Hull, England, . . . . .	220,844	'96
Bloemfontein, Or. Fr. St., . . . . .	5,817	'92	Iquique, Chile, . . . . .	33,031	'95
Bluefields, Cen. Am., . . . . .	2,100	'98	Irkutsk, Siberia, . . . . .	51,484	'97
Bogota, Colombia, . . . . .	120,000	'86	Ispahan, Persia, . . . . .	80,000	'92
Bombay, India, . . . . .	821,764	'91	Jerusalem, Turkey, . . . . .	41,335	'91
Bordeaux, France, . . . . .	256,906	'96	Johannesburg, S. Af., . . . . .	102,714	'96
Bradford, Eng., . . . . .	228,809	'96	Kabul, Afghanistan, . . . . .	100,000	'90
Bremen, Germany, . . . . .	196,807	'95	Kharkof, Russia, . . . . .	170,682	'97
Breslau, Germany, . . . . .	378,250	'95	Kief, Russia, . . . . .	248,750	'97
Brisbane, Australia, . . . . .	100,918	'96	Kimberley, Cape Col., . . . . .	30,000	'95
Bristol, Eng., . . . . .	280,623	'96	Königsberg, Germany, . . . . .	172,796	'95
Brussels, Belgium, . . . . .	194,505	'96	Kyoto, Japan, . . . . .	340,101	'96
Budapest, Hungary, . . . . .	491,988	'90	La Guaira, Venezuela, . . . . .	14,000	'90
Buenos Aires, Arg., . . . . .	921,168	'97	Lahore, India, . . . . .	176,854	'91
Bukharest, Roumania, . . . . .	282,009	'94	La Paz, Bolivia, . . . . .	62,320	'96
Bushire, Persia, . . . . .	20,000	'90	La Plata, Argentina, . . . . .	45,410	'95
Cairo, Egypt, . . . . .	576,400	'97	Lassa, Tibet, . . . . .	25,000	'90
Calcutta, India, . . . . .	810,786	'91	Lausanne, Switzerland, . . . . .	40,671	'96
Callao, Peru, . . . . .	15,000	'91	Leeds, England, . . . . .	402,449	'96
Canton, China, . . . . .	2,000,000	'96	Leghorn, Italy, . . . . .	104,269	'96
Cape Town, Cape Col., . . . . .	51,252	'91	Leicester, England, . . . . .	198,650	'96
Caracas, Venezuela, . . . . .	72,429	'91	Leipzig, Germany, . . . . .	399,963	'95
Cardiff, Wales, . . . . .	162,690	'96	Lomborg, Austria, . . . . .	127,948	'90
Catania, Italy, . . . . .	127,117	'96	Leon, Mexico, . . . . .	90,978	'95
Cawnpur, India, . . . . .	188,712	'91	Liege, Belgium, . . . . .	165,404	'96
Cayenne, Fr. Guiana, . . . . .	12,351	'90	Lima, Peru, . . . . .	103,936	'91
Cetinje, Montenegro, . . . . .	2,920	'90	Lisbon, Portugal, . . . . .	301,206	'90
Charlottetown, Canada, . . . . .	11,374	'90	Lisle, France, . . . . .	216,276	'96
Chemnitz, Germany, . . . . .	161,017	'90	Liverpool, England, . . . . .	632,512	'96
Chillán, Chile, . . . . .	28,738	'95	London, England, . . . . .	4,438,018	'96
Christiania, Norway, . . . . .	151,239	'96	Lubeck, Germany, . . . . .	69,874	'96
Cienfuegos, . . . . .	28,030	'95	Lucknow, India, . . . . .	273,038	'91
Cochabamba, Bolivia, . . . . .	29,530	'96	Lyons, France, . . . . .	466,028	'96
Cologne, Germany, . . . . .	321,564	'95	Madras, India, . . . . .	454,518	'91
Colombo, Ceylon, . . . . .	126,926	'91	Madrid, Spain, . . . . .	499,270	'90
Concepcion, Chile, . . . . .	39,837	'95	Magdeburg, Germany, . . . . .	214,424	'95
Constantinople, Turk., . . . . .	873,565	'85	Malaga, Spain, . . . . .	134,016	'97
Copenhagen, Denmark, . . . . .	312,859	'90	Managua, Central Am., . . . . .	20,000	'90
Cordova, Argentina, . . . . .	47,609	'95	Manchester, Eng., . . . . .	529,541	'96
Cuzco, Peru, . . . . .	22,000	'89	Mandalay, Burma, . . . . .	188,815	'91
Damascus, Turkey, . . . . .	150,000	'90	Manila, Philippine Is., . . . . .	154,062	'97
Danzig, Germany, . . . . .	125,605	'95	Maracibo, Venezuela, . . . . .	34,284	'91
Delhi, India, . . . . .	192,579	'91	Maranhao, Brazil, . . . . .	38,000	'90
Dresden, Germany, . . . . .	336,440	'95	Marseilles, France, . . . . .	442,239	'91
Dublin, Ireland, . . . . .	245,001	'91	Maskat, Oman, . . . . .	60,000	'90
Dundee, Scotland, . . . . .	158,587	'91	Matanzas, . . . . .	49,584	'93
Dunedin, New Zealand, . . . . .	2,815	'96	Mecca, Turkey, . . . . .	60,000	'90
Edinburgh, Scotland, . . . . .	263,466	'91	Medellin, Colombia, . . . . .	40,000	'96
Fez, Morocco, . . . . .	145,000	'90	Melbourne, Australia, . . . . .	468,610	'97
Florence, Italy, . . . . .	207,070	'96	Messina, Italy, . . . . .	150,805	'96
Frankfort am Main, Ger., . . . . .	229,279	'95	Mexico, . . . . .	344,377	'95
Fredericton, Canada, . . . . .	6,503	'91	Milan, Italy, . . . . .	456,698	'96
Fuchau, China, . . . . .	650,000	'96	Mollendo, Peru, . . . . .	3,000	'90
Geneva, Switz., . . . . .	86,535	'97	Monterey, Mexico, . . . . .	56,855	'95
Genoa, Italy, . . . . .	225,185	'96	Montevideo, Uruguay, . . . . .	243,000	'96
Georgetown, B. Guiana, . . . . .	53,176	'91	Montreal, Can., . . . . .	216,250	'91
Ghent, Belgium, . . . . .	159,218	'96	Morocco, . . . . .	45,000	'90
Glasgow, Scotland, . . . . .	658,198	'91	Moscow, Russia, . . . . .	988,610	'97
Göteborg, Sweden, . . . . .	117,350	'96	Mukden, Manchuria, . . . . .	200,000	'90
Guadalajara, Mexico, . . . . .	83,870	'95	Munich, Germany, . . . . .	407,307	'95
Guayaquil, Ecuador, . . . . .	51,000	'90	Nantes, France, . . . . .	123,902	'96
			Naples, Italy, . . . . .	529,466	'96

POPULATION OF FOREIGN CITIES—*Continued.*

Newcastle, England, . . .	212,223	'96	Santos, Brazil, . . .	15,000	'90
New Guatemala, C. A., . . .	71,527	'93	Sao Paulo, Brazil, . . .	100,000	'92
Ningpo, China, . . .	255,000	'96	Seoul, Korea, . . .	192,940	'90
Nottingham, Eng., . . .	229,775	'96	Seville, Spain, . . .	143,182	'87
Nuremberg, Germany, . . .	162,386	'95	Shanghai, China, . . .	405,000	'96
Odessa, Russia, . . .	404,651	'97	Sheffield, England, . . .	347,278	'96
Oporto, Portugal, . . .	138,860	'90	Singapore, Straits S., . . .	181,534	'96
Oran, Algeria, . . .	80,941	'96	Smyrna, Turkey, . . .	200,000	'90
Osaka, Japan, . . .	487,184	'96	Sofia, Bulgaria, . . .	47,000	'93
Ottawa, Canada, . . .	53,463	'98	Stockholm, Sweden, . . .	297,860	'96
Palermo, Italy, . . .	283,742	'96	Strassburg, Germany, . . .	135,608	'95
Panama, Colombia, . . .	30,000	'86	Stuttgart, Germany, . . .	158,321	'95
Para, Brazil, . . .	65,000	'92	Suchau, China, . . .	500,000	'96
Paramaribo, D. Guiana, . . .	29,000	'98	Sucre, Bolivia, . . .	26,190	'96
Paris, France, . . .	2,536,884	'96	Sydney, Australia, . . .	410,000	'97
Pekin, China, . . .	1,000,000	'90	Tabriz, Persia, . . .	180,000	'96
Pernambuco, Brazil, . . .	190,000	'92	Talca, Chile, . . .	33,232	'95
Perth, Australia, . . .	43,000	'98	Tananarivo, Madagascar, . . .	100,000	'90
Ponce, Porto Rico, . . .	15,000	'98	Tashkend, Turkestan, . . .	156,506	'97
Port Elizabeth, Cape C., . . .	23,266	'91	Tegucigalpa, Cent. Am., . . .	12,600	'90
Porto Alegre, Brazil, . . .	55,000	'92	Teheran, Persia, . . .	230,000	'90
Port Said, Egypt, . . .	35,506	'97	Tientsin, China, . . .	1,000,000	'98
Portsmouth, Eng., . . .	178,639	'96	Tiflis, Transcaucasia, . . .	159,862	'97
Prague, Austria, . . .	182,580	'90	Tiumen, Siberia, . . .	36,763	'91
Pretoria, S. Afr. Rep., . . .	14,000	'90	Tokyo, Japan, . . .	1,263,930	'96
Puebla, Mexico, . . .	91,917	'95	Toronto, Canada, . . .	194,314	'98
Quebec, Canada, . . .	75,000	'98	Toulouse, France, . . .	149,963	'96
Quito, Ecuador, . . .	80,000	'90	Trebizond, Turkey, . . .	35,000	'90
Rangoon, Burma, . . .	180,324	'91	Trieste, Austria, . . .	157,466	'90
Rheims, France, . . .	107,963	'96	Tripoli, . . .	30,110	'90
Riga, Russia, . . .	282,943	'97	Tucuman, Argentina, . . .	34,305	'95
Rio de Janeiro, Brazil, . . .	523,651	'95	Tunis, . . .	170,000	'90
Rome, Italy, . . .	474,018	'96	Turin, Italy, . . .	348,001	'96
Rosario, Argentina, . . .	94,325	'95	Valencia, Spain, . . .	170,763	'87
Rotterdam, Neth., . . .	286,103	'96	Valencia, Venez., . . .	38,654	'91
Rouen, France, . . .	113,219	'96	Valparaiso, Chili, . . .	112,447	'95
Saigon, Indo-China, . . .	50,000	'90	Vancouver, Can., . . .	13,685	'91
St. Etienne, France, . . .	186,030	'96	Venice, Italy, . . .	153,764	'96
St. John, Canada, . . .	40,179	'97	Vera Cruz, Mexico, . . .	88,993	'95
St. John's, Newfoundland, . . .	29,007	'91	Victoria, Can., . . .	16,841	'91
St. Petersburg, Russia, . . .	1,267,023	'97	Vienna, Austria, . . .	1,364,548	'90
Salford, Eng., . . .	210,707	'96	Vladivostok, Siberia, . . .	14,450	'91
Saloniki, Turkey, . . .	150,000	'90	Warsaw, Russia, . . .	614,752	'97
San Jose, Cent. Amer., . . .	25,000	'95	Wellington, N. Zealand, . . .	37,441	'96
San Juan, Porto Rico, . . .	30,000	'98	Winnipeg, Canada, . . .	38,733	'98
San Salvador, C. Am., . . .	25,000	'90	Yokohama, Japan, . . .	170,252	'96
Santiago, Chile, . . .	256,403	'95	Zanzibar, Africa, . . .	100,000	'90
Santiago de Cuba, . . .	59,614	'87	Zurich, Switzerland, . . .	151,994	'97

## POPULATION OF THE LARGER CITIES IN THE U. S. AND CAPITALS.

*From United States Census of 1900 unless Otherwise Marked.*

Akron, Ohio, . . .	42,728		Baton Rouge, La., . . .	10,478	'90
Albany, N. Y., . . .	94,151		Battle Creek, Mich., . . .	18,000	'98
Albuquerque, N. M., . . .	8,785	'90	Bay City, Mich., . . .	27,628	
Allegheny, Pa., . . .	129,896		Bayonne, N. J., . . .	32,722	
Allentown, Pa., . . .	35,416		Biddeford, Me., . . .	14,433	'90
Altoona, Pa., . . .	38,973		Binghamton, N. Y., . . .	39,647	
Anaconda, Mont., . . .	15,000	'98	Birmingham, Ala., . . .	38,415	
Anderson, Ind., . . .	25,000	'98	Bismarck, N. D., . . .	2,186	'90
Annapolis, Md., . . .	7,604		Boston, Mass., . . .	560,892	
Asheville, N. C., . . .	12,832	'98	Braddock, Pa., . . .	13,000	'98
Atlanta, Ga., . . .	89,872		Bridgeport, Conn., . . .	70,996	
Atlantic City, N. J., . . .	27,838		Brockton, Mass., . . .	40,063	
Auburn, N. Y., . . .	30,345		Buffalo, N. Y., . . .	352,387	
Augusta, Ga., . . .	39,441		Burlington, Ia., . . .	25,246	'95
Augusta, Me., . . .	10,527	'90	Burlington, Vt., . . .	16,636	'98
Austin, Tex., . . .	14,575	'90	Butte, Mont., . . .	30,470	
Baltimore, Md., . . .	508,957		Cambridge, Mass., . . .	91,886	
Bangor, Me., . . .	19,103	'90	Camden, N. J., . . .	75,935	
Barre, Vt., . . .	8,000	'98	Canton, Ohio, . . .	30,667	
Bath, Me., . . .	9,723	'90	Carson City, Nev., . . .	3,956	'90

POPULATION OF CITIES IN THE UNITED STATES.—*Continued.*

Cedar Rapids, Ia., . . .	25,656		La Crosse, Wis., . . .	28,895	
Charleston, S. C., . . .	55,807		Lancaster, Pa., . . .	41,459	
Charleston, W. Va., . . .	10,000	'98	Lansing, Mich., . . .	19,500	'98
Charlotte, N. C., . . .	19,651	'98	Lawrence, Mass., . . .	62,559	
Chester, Pa., . . .	33,988		Leadville, Col., . . .	10,384	'90
Chattanooga, Tenn., . . .	32,490		Leavenworth, Kan., . . .	20,822	'95
Chelsea, Mass., . . .	34,072		Lewiston, Me., . . .	21,701	'90
Cheyenne, Wyo., . . .	11,690	'90	Lexington, Ky., . . .	26,369	
Chicago, Ill., . . .	1,698,575		Lincoln Neb., . . .	40,169	
Chillicothe, Ohio, . . .	16,000	'98	Little Rock, Ark., . . .	38,307	
Cincinnati, Ohio, . . .	325,902		Lorain, Ohio, . . .	12,000	'98
Cleveland, Ohio, . . .	381,768		Los Angeles, Cal., . . .	102,479	
Cohoes, N. Y., . . .	24,000	'98	Louisville, Ky., . . .	204,731	
Colorado Springs, Col., . . .	23,000	'98	Lowell, Mass., . . .	94,969	
Columbia, S. C., . . .	15,583	'90	Lynchburg, Va., . . .	19,709	'90
Columbus, Ga., . . .	17,303	'90	Lynn, Mass., . . .	68,513	
Columbus, Ohio, . . .	125,560		Macon, Ga., . . .	22,746	'90
Concord, N. H., . . .	17,004	'90	Madison, Wis., . . .	15,950	'95
Council Bluffs, Ia., . . .	25,802		Malden, Mass., . . .	33,664	
Covington, Ky., . . .	42,938		Manchester, N. H., . . .	56,987	
Cumberland, Md., . . .	12,729		McKeesport, Pa., . . .	34,227	
Dallas, Tex., . . .	42,638		Memphis, Tenn., . . .	102,320	
Danville, Va., . . .	18,000	'98	Meriden, Conn., . . .	21,652	'90
Davenport, Ia., . . .	35,254		Meriden, Wis., . . .	10,624	'90
Dayton, Ohio, . . .	85,333		Milwaukee, Wis., . . .	285,315	
Denver, Col., . . .	133,859		Minneapolis, Minn., . . .	202,718	
Des Moines, Ia., . . .	62,139		Mobile, Ala., . . .	38,469	
Detroit, Mich., . . .	285,704		Montgomery, Ala., . . .	30,346	
Dover, Del., . . .	3,061	'90	Montpelier, Vt., . . .	6,000	'98
Dover, N. H., . . .	12,790	'90	Muncie, Ind., . . .	30,180	'98
Dubuque, Ia., . . .	36,297		Nashua, N. H., . . .	19,311	'90
Duluth, Minn., . . .	52,969		Nashville, Tenn., . . .	80,865	
Durham, N. C., . . .	11,200	'98	Natchez, Miss., . . .	10,101	'90
Easton, Pa., . . .	25,238		New Albany, Ind., . . .	21,059	'90
East St. Louis, Ill., . . .	29,655		Newark, N. J., . . .	246,070	
Eau Claire, Wis., . . .	18,637	'98	New Bedford, Mass., . . .	62,442	
Elgin, Ill., . . .	17,823	'90	New Britain, Conn., . . .	25,998	
Elizabeth, N. J., . . .	52,180		Newcastle, Pa., . . .	29,339	
Elmira, N. Y., . . .	35,672		New Haven, Conn., . . .	108,027	
Erie, Pa., . . .	52,733		New Orleans, La., . . .	287,104	
Evansville, Ind., . . .	59,007		Newport, Ky., . . .	28,301	
Fall River, Mass., . . .	104,863		Newport, R. I., . . .	21,537	'95
Fargo, N. D., . . .	8,000	'98	Newton, Mass., . . .	33,587	
Fitchburg, Mass., . . .	31,531		New York, N. Y., . . .	3,437,202	
Fort Wayne, Ind., . . .	45,115		Norfolk, Va., . . .	46,624	
Forth Worth, Tex., . . .	26,688		Norwich, Conn., . . .	25,000	'98
Frankfort, Ky., . . .	7,892	'90	Oakland, Cal., . . .	66,960	
Galveston, Tex., . . .	37,789		Ogden, Utah, . . .	15,828	'95
Gloucester, Mass., . . .	26,121		Oklahoma, Okla., . . .	4,151	'90
Grand Rapids, Mich., . . .	87,565		Olympia, Wash., . . .	4,698	'90
Great Falls, Mont., . . .	11,250	'98	Omaha, Neb., . . .	102,555	
Hammond, Ind., . . .	15,000	'98	Oshkosh, Wis., . . .	28,284	
Harrisburg, Pa., . . .	50,167		Parkersburg, W. Va., . . .	15,000	'98
Hartford, Conn., . . .	79,850		Passaic, N. J., . . .	27,777	
Haverhill, Mass., . . .	37,175		Paterson, N. J., . . .	105,171	
Hazleton, Pa., . . .	20,827	'98	Pawtucket, R. I., . . .	39,231	
Helena, Mont., . . .	13,834	'90	Pensacola, Fla., . . .	14,084	'95
Hoboken, N. J., . . .	59,364		Peoria, Ill., . . .	56,100	
Holyoke, Mass., . . .	45,712		Petersburg, Va., . . .	22,680	'90
Houston, Tex., . . .	44,633		Philadelphia, Pa., . . .	1,293,697	
Huntington, W. Va., . . .	15,000	'98	Phoenix, Ariz., . . .	3,152	'90
Indianapolis, Ind., . . .	169,164		Pierre, S. D., . . .	3,236	'90
Jackson, Tenn., . . .	16,000	'98	Pine Bluff, Ark., . . .	9,952	'90
Jackson, Miss., . . .	5,920	'90	Pittsburg, Pa., . . .	321,616	
Jacksonville, Fla., . . .	28,429		Poplar Bluff, Mo., . . .	12,000	'98
Jefferson City, Mo., . . .	10,000	'98	Portland, Me., . . .	50,145	
Jersey City, N. J., . . .	206,433		Portland, Ore., . . .	90,426	
Johnstown, Pa., . . .	35,936		Portsmouth, N. H., . . .	9,827	'90
Joliet, Ill., . . .	29,353		Poughkeepsie, N. Y., . . .	25,000	'98
Kansas City, Kan., . . .	51,418		Providence, R. I., . . .	175,597	
Kansas City, Mo., . . .	163,752		Pueblo, Col., . . .	24,157	
Key West, Fla., . . .	13,502	'95	Quincy, Ill., . . .	36,252	
Knoxville, Tenn., . . .	32,637		Racine, Wis., . . .	29,102	

POPULATION OF CITIES IN THE UNITED STATES.—*Continued.*

Raleigh, N. C., . . . . .	12,678	'90	Springfield, Mass., . . . . .	62,059	
Reading, Pa., . . . . .	78,961		Springfield, Mo., . . . . .	21,850	'90
Richmond, Va., . . . . .	85,050		Springfield, Ohio, . . . . .	38,253	
Roanoke, Va., . . . . .	16,159	'90	Stamford, Conn., . . . . .	20,000	'98
Rochester, N. Y., . . . . .	162,608		Stockton, Cal., . . . . .	14,424	'90
Rockford, Ill., . . . . .	31,051		Superior, Wis., . . . . .	31,091	
Rock Springs, Wyo., . . . . .	5,000	'98	Syracuse, N. Y., . . . . .	108,374	
Rutland, Vt., . . . . .	11,760	'90	Tacoma, Wash., . . . . .	37,714	
Sacramento, Cal., . . . . .	29,282		Tallahassee, Fla., . . . . .	3,931	'95
Saginaw, Mich., . . . . .	42,345		Tampa, Fla., . . . . .	25,000	'98
St. Augustine, Fla., . . . . .	4,151	'95	Taunton, Mass., . . . . .	31,036	
St. Joseph, Mo., . . . . .	102,979		Terre Haute, Ind., . . . . .	36,673	
St. Louis, Mo., . . . . .	575,238		Toledo, Ohio, . . . . .	131,822	
St. Paul, Minn., . . . . .	163,065		Topeka, Kan., . . . . .	33,608	
Salem, Mass., . . . . .	35,966		Trenton, N. J., . . . . .	73,307	
Salem, Ore., . . . . .	10,470	'90	Troy, N. Y., . . . . .	60,651	
Salt Lake City, Utah, . . . . .	53,531		Utica, N. Y., . . . . .	56,383	
San Antonio, Tex., . . . . .	53,321		Vicksburg, Miss., . . . . .	13,373	'90
San Diego, Cal., . . . . .	16,159	'90	Virginia City, Nev., . . . . .	8,511	'90
San Francisco, Cal., . . . . .	342,782		Waco, Tex., . . . . .	25,000	'98
San José, Cal., . . . . .	18,060	'90	Washington, D. C., . . . . .	278,718	
Santa Fé, N. M., . . . . .	6,185	'90	Waterbury, Conn., . . . . .	56,859	
Savannah, Ga., . . . . .	54,244		Wheeling, W. Va., . . . . .	38,878	
Schenectady, N. Y., . . . . .	31,682		Wichita, Kan., . . . . .	20,841	'95
Scranton, Pa., . . . . .	102,026		Wilkesbarre, Pa., . . . . .	51,721	
Seattle, Wash., . . . . .	80,671		Williamsport, Pa., . . . . .	28,757	
Sheboygan, Wis., . . . . .	21,130	'98	Wilmington, Del., . . . . .	76,508	
Sherman, Tex., . . . . .	15,000	'98	Wilmington, N. C., . . . . .	25,000	'98
Shreveport, La., . . . . .	11,979	'90	Winona, Minn., . . . . .	20,649	'95
Sioux City, Ia., . . . . .	33,111		Woonsocket, R. I., . . . . .	28,204	
Sioux Falls, S. D., . . . . .	9,002	'95	Worcester, Mass., . . . . .	118,421	
Somerville, Mass., . . . . .	61,643		Yankton, S. D., . . . . .	4,500	'98
South Bend, Ind., . . . . .	35,999		Yonkers, N. Y., . . . . .	47,931	
South Omaha, Neb., . . . . .	26,001		York, Pa., . . . . .	33,705	
Spokane, Wash., . . . . .	36,848		Youngstown, Ohio, . . . . .	44,885	
Springfield, Ill., . . . . .	34,159		Zanesville, Ohio, . . . . .	25,000	'98

## THE TEN LARGEST CITIES OF THE WORLD.

London, . . . . .	4,433,018	'96	Chicago, . . . . .	1,698,575	'00
New York, . . . . .	3,437,202	'00	Vienna, . . . . .	1,364,548	'90
Paris, . . . . .	2,536,870	'96	Philadelphia, . . . . .	1,293,697	'00
Canton, . . . . .	2,000,000	'96	Tokyo, . . . . .	1,268,930	'96
Berlin, . . . . .	1,677,304	'95	St. Petersburg, . . . . .	1,267,024	'97

## HEIGHTS OF MOUNTAINS, PLATEAUS, AND PEAKS.

## NORTH AMERICA.

Name.	Feet.	Location.
Appalachian Mts., . . . . .	2,500	United States.
Brown, Mt., . . . . .	16,000	Canada.
Cascade Mts., . . . . .	9,000	U. S. and Canada.
Coast Ranges, . . . . .	3,000	United States.
Fremonts Peak, . . . . .	13,790	Wyoming, U. S.
Hood, Mt., . . . . .	11,934	Oregon, U. S.
Hooker, Mt., . . . . .	12,000	Canada.
Jorullo, Vol., . . . . .	4,265	Mexico.
Katahdin, Mt., . . . . .	5,385	Maine, U. S.
Laramie Peak, . . . . .	10,000	Wyoming, U. S.
Logan, Mt., . . . . .	19,500	Canada.
Longs Peak, . . . . .	14,271	Colorado, U. S.
Marcy, Mt., . . . . .	5,345	New York, U. S.
Mexican Plateau, . . . . .	7,500	Mexico.
Mitchell, Mt., . . . . .	3,710	North Carolina, U. S.
Orizaba, Vol., . . . . .	13,312	Mexico.
Pikes Peak, . . . . .	14,147	Colorado, U. S.
Poconatepetl, Vol., . . . . .	17,784	Mexico.
Rainer, Mt., . . . . .	14,520	Washington, U. S.
Rocky Mts., . . . . .	10,000	N. A.

HEIGHTS OF MOUNTAINS, PLATEAUS, AND PEAKS—*Continued.*

NORTH AMERICA.		
Name.	Feet.	Location.
Rocky Mt. Highland, . . . . .	5,000	U. S.
Shasta, Mt., . . . . .	14,350	California, U. S.
Sierra Nevada Mts., . . . . .	9,000	U. S.
Spanish Peak, . . . . .	14,000	Colorado, U. S.
St. Elias, Mt., . . . . .	18,010	Alaska.
Washington, Mt., . . . . .	6,288	New Hampshire, U. S.
Whitney, Mt., . . . . .	14,900	California, U. S.
Wrangell, Mt., . . . . .	17,500	Alaska.
SOUTH AMERICA.		
Aconcagua, . . . . .	23,910	Chili.
Andes Mts., . . . . .	13,000	
Arequipa, Vol., . . . . .	20,520	Peru.
Bolivian Plateau, . . . . .	12,500	
Brazilian Plateau, . . . . .	2,000	
Climborazo, Vol., . . . . .	20,500	Ecuador.
Cotopaxi, Vol., . . . . .	16,291	Ecuador.
Guiana Plateau, . . . . .	2,000	
Sahama, Vol., . . . . .	22,350	Bolivia
Sorata, Mt., . . . . .	21,288	Bolivia.
EUROPE.		
Alps Mts., . . . . .	8,500	Switzerland.
Apennines, . . . . .	4,000	Italy.
Balkan Mts., . . . . .	4,500	
Blanc, Mont., . . . . .	15,744	France.
Bohmerwald Mts., . . . . .	2,500	Austria-Hungary.
Cantabrian Mts., . . . . .	8,000	Spain.
Carpathian Mts., . . . . .	5,000	Austria-Hungary.
Caucasus Mts., . . . . .	10,000	Russia.
Cenis, Mont., . . . . .	11,000	France.
Elburz, Mt., . . . . .	18,493	Russia.
Etna, Vol., . . . . .	10,875	Sicily.
Hecla, Vol., . . . . .	5,108	Iceland.
Jura Mts., . . . . .	3,000	France.
Kiolen, Mts., . . . . .	3,000	Norway.
Nevis, Ben., . . . . .	4,406	Scotland.
Pyrenees Mts., . . . . .	8,000	Spain.
Rosa, Monte, . . . . .	15,217	Italy.
St. Gothard, Mt., . . . . .	10,000	Switzerland.
Snowdon, Mt., . . . . .	3,560	Wales
Stromboli, Vol., . . . . .	3,000	Lipari Islands.
Ural Mts., . . . . .	3,500	Russia.
Vesuvius, Vol., . . . . .	4,205	Italy.
ASIA.		
Altai Mts., . . . . .	6,300	Mongolia, China.
Ararat, Vol., . . . . .	17,000	Turkey.
Dekkan Plateau, . . . . .	2,000	India.
Demavend, Vol., . . . . .	18,845	Persia.
Everest, Mt., . . . . .	29,002	Nepal.
Fujiyama, Vol., . . . . .	14,177	Japan.
Himalaya Mts., . . . . .	19,000	Tibet.
Hermon, Mt., . . . . .	11,000	Palestine.
Hindu-Kush Mts., . . . . .	18,000	Afghanistan.
Iran Plateau, . . . . .	5,000	Persia.
Karakoram Mts., . . . . .	18,500	Tibet.
Kuenlun Mts., . . . . .	18,000	Tibet.
Mongolian Plateau, . . . . .	3,500	
Sinai, Mt., . . . . .	7,097	Turkey.
Taurus Mts., . . . . .	11,000	Syria.
Thian Shan, . . . . .	18,000	Turkestan, China, Si-beria.
Tibet Plateau, . . . . .	15,000	China.

HEIGHTS OF MOUNTAINS, PLATEAUS, AND PEAKS—*Continued.*

AFRICA.			
Name.		Feet.	Location.
Abyssinian Plateau, . . . . .		10,000	E. Africa.
Abba Jared, . . . . .		14,714	Abyssinia.
Atlas Mts., . . . . .		9,000	N. Africa.
Kenia, Mt., . . . . .		18,000	E. Africa.
Kilimanjaro, Mt., . . . . .		20,000	E. Africa.
Tenerife, Mt., . . . . .		12,000	Canary Islands.
Miltsin, Mt., . . . . .		11,400	Morocco.
Pico, Peak, . . . . .		7,000	Azores.

OCEANIA.			
Australian Mts., . . . . .		5,000	S. E. Australia.
Kosciusko, Mt., . . . . .		7,000	Australia.
Cook, Mt., . . . . .		12,350	New Zealand.
Kilauea, Mt., . . . . .		4,000	Hawaiian Islands.
Mauna Loa, Vol., . . . . .		13,760	Hawaii.
Mauna Kea, Vol., . . . . .		13,954	Hawaii.

## RIVERS. LENGTHS, AREAS OF BASINS.

NORTH AMERICA.			
Name.	Length in miles.	Area of Basin.	Ocean Basin.
Colorado, . . . . .	1000	280,000	Pacific
Columbia, . . . . .	1400	290,000	Pacific
Mackenzie, . . . . .	2400	680,000	Arctic
Mississippi, . . . . .	4200	1,250,000	Atlantic
Nelson-Saskatchewan, . . . . .	1900	470,000	Atlantic
Rio Grande, . . . . .	1800	225,000	Atlantic
St. Lawrence, . . . . .	2000	360,000	Atlantic
Yukon, . . . . .	2000	440,000	Pacific
SOUTH AMERICA.			
Amazon, . . . . .	3600	2,500,000	Atlantic
La Plata, . . . . .	2500	1,250,000	Atlantic
Magdalena, . . . . .	1100	90,000	Atlantic
Orinoco, . . . . .	1500	400,000	Atlantic
San Francisco, . . . . .	1800	200,000	Atlantic
Tocantins, . . . . .	1700	380,000	Atlantic
EUROPE.			
Danube, . . . . .	1900	320,000	Atlantic
Dnieper, . . . . .	1800	197,000	Atlantic
Elbe, . . . . .	750	42,000	Atlantic
Rhine, . . . . .	965	65,000	Atlantic
Rhone, . . . . .	550	33,000	Atlantic
Thames, . . . . .	215	6,000	Atlantic
Volga, . . . . .	2800	590,000	Caspian Sea
ASIA.			
Amur, . . . . .	2700	780,000	Pacific
Brahmaputra, . . . . .	2000	426,000	Indian
Ganges, . . . . .	1800	450,000	Indian
Hoang, . . . . .	2800	390,000	Pacific
Irawadi, . . . . .	1200	180,000	Indian
Indus, . . . . .	2000	325,000	Indian
Lena, . . . . .	2700	900,000	Arctic
Mekong, . . . . .	2600	275,000	Indian
Obi, . . . . .	3000	1,000,000	Arctic
Yangtze, . . . . .	3300	650,000	Pacific
Yenisei, . . . . .	3000	1,400,000	Arctic

RIVERS. LENGTHS, AREAS OF BASINS—Continued.

AFRICA.						
Name.				Length in miles.	Area of Basin.	Ocean Basin.
Euphrates,	.	.	.	2000	490,000	
Kongo,	.	.	.	3000	1,500,000	Atlantic
Niger,	.	.	.	2900	1,000,000	Atlantic
Nile,	.	.	.	3900	1,300,000	Atlantic
Orange	.	.	.	1200	270,000	Atlantic
Zambezi,	.	.	.	1500	500,000	Indian
AUSTRALIA.						
Murray,	.	.	.	1100	350,000	Indian

LAKES.						
				Area, Sq. Miles.	Altitude, Feet.	Depth, Feet.
Aral,	.	.	.	26,100	158	220
Baikal	.	.	.	13,197	1,400	4,500
Balkash,	.	.	.	8,550	900	130
Caspian,	.	.	.	169,380	85	3,096
Chapala,	.	.	.	1,300	7,000	
Dead Sea,	.	.	.	350	1,300	1,300
Erie,	.	.	.	9,950	578	212
Great Salt,	.	.	.	2,300	4,200	50
Huron,	.	.	.	23,800	581	700
Ladoga,	.	.	.	7,000	55	790
Michigan,	.	.	.	22,450	581	870
Nicaragua,	.	.	.	2,800	108	320
Ontario,	.	.	.	7,242	248	788
Superior,	.	.	.	31,200	602	1,008
Tanganyika,	.	.	.	14,000	2,870	1,300
Tchad,	.	.	.	10,400	1,100	20
Titicaca,	.	.	.	3,260	12,500	925
Victoria,	.	.	.	32,167	4,000	620
Winnipeg,	.	.	.	9,400	710	72



# PRONOUNCING VOCABULARY.

**Key:** *āle*, *āt*, *cāre*, *ārm*, *āl*; *ēve*, *ēnd*, *hēr*; *ice*, *ill*; *ōld*, *fōr*, *ōn*; *ūse*, *ūp*, *fūr*; *fōd*, *fōt*; *ch* as in *chop*; *g* as in *go*; *ng* as in *sing*; *ŋ* as in *ŋk*; *th* as in *thin*; *th* as in *the*; *ñ* as in *banyan*; *oi* as in *oil*; *ow* as in *cow*; *n* *nearly like* *ng* in *sing* (*French nasal*). Unmarked vowels obscure. See Key to International Dictionary.

Aarhuus, *ār-hūōs*.  
Aberdeen, *āb-er-dēn'*.  
Abomey, *āb-ō-mā'*.  
Abyssinia, *āb-ī-sīn'ī-a*.  
Acapulco, *a-ka-pōōl'kō*.  
Acaray, *a-kā'ā*.  
Acouaguan, *a-kōn-kā'gwā*.  
Acropolis, *ā-krōp'ō-lī-a*.  
Adelaido, *ād-e-lād*.  
Aden, *ā'den*.  
Adige, *ā'dī-jē*.  
Adirondack, *ād-ī-rōn'dak*.  
Adrian, *ād'ri-an*.  
Adrianople, *ād-rī-an-ō'pl*.  
Adriatic, *ād-rē-āt'ik*.  
Ægean, *ē-jē-an*.  
Afghanistan, *af-gān-īa-tān'*.  
Africa, *ā'frī-ka*.  
Aix-la-Chapelle, *āks-lā-shā-pēl'*.  
Ajaccio, *ā-yāt'chō*.  
Akron, *āk'ron*.  
Alabama, *āl-a-bā'ma*.  
Alameda, *ā-lā-mā'da*.  
Alaska, *āl-lā'ska*.  
Albany, *āl-bā-nī*.  
Albemarle, *āl-be-marī*.  
Alberta, *āl-bērtā*.  
Albuquerque, *āl-bōō kārk'kū*.  
Alderney, *āl'der-nī*.  
Aleutian, *āl-lū'ht-an*.  
Alexandria, *āl-egs-ān'dri-a*.  
Algeria, *āl-jē'ri-ā*.  
Algiers, *āl-jē'rz*.  
Alleghany, *āl-e-gā-nī*.  
Allegheny, *āl-e-gā-nī*.  
Almaden, *āl-mā'dēn*.  
Alpine, *āl'pīn*.  
Alkal, *āl'kāl*.  
Almanaha, *āl-ta-ma-hā*.  
Altoona, *āl-tōō'na*.  
Amazon, *ām'a-zōn*.  
Ameer, *ā-mēr'*.  
Amsterdam, *ām'ster-dām*.  
Amur, *ā-mōōr'*.  
Anaconda, *ān-a-kōn'da*.  
Anam, *ā-nām*.  
Andean, *ān-dē-an*.  
Andes, *ān'dēz*.  
Andorra, *ān-dō'rā*.  
Andros, *ān-drōs*.  
Annapolis, *ān-nāp'ō-lī-a*.  
Antarctic, *ān-tārk'tik*.  
Anticosti, *ān-tī-kōs'tī*.  
Antigua, *ān-tē'ua*.  
Antilles, *ān-tī'lēz*, or *ōn'tēl'*.  
Antwerp, *ān'wērp*.  
Apalachee, *āp-a-lāch'ē*.  
Apalachicola, *āp-a-lāch-ī-kō'lā*.  
Appennines, *āp'en-nīnz*.  
Apia, *āpē-ā*.  
Appalachian, *āp-pa-lā'chī-an*.  
Appomattox, *āp-pō-māt'tōks*.  
Arab, *ār'āb*.  
Arabian, *ār-ābī-an*.  
Araguay, *ār-ā-gwī'*.  
Aral, *ār'al*.  
Ararat, *ār-ā-rāt*.  
Archangel, *ār-kān'jēl*.  
Archipelago, *ār-kī-pēl'ā-gō*.  
Arctic, *ārkt'ik*.  
Arequipa, *ār-ā-kē-pā*.  
Argentina, *ār-jēn'te-na*.  
Arizona, *ār-ī-zō'na*.  
Arkansas, *ār-kan-sā'*.  
Arno, *ār'nō*.  
Aryan, *ār-yan*.  
Ashville, *āsh'vīl*.  
Asia, *āshī-a*.  
Asiatic, *āshī-āt'ik*.

Aspinwall, *ās'pīn-wāl*.  
Assiniboine, *ās-sīn'ī-boīn*.  
Astoria, *ās-tō'ri-a*.  
Astrakhan, *ās-trā-kān'*.  
Atacama, *ā-ta-kā'mā*.  
Atbara, *āt-bā'ra*.  
Atchafalaya, *āch-af-a-lī'a*.  
Atchison, *āch'ī-son*.  
Athabasca, *āth-a-bās'ka*.  
Athens, *āth'ēnz*.  
Atlanta, *āt-lān'ta*.  
Atlantic, *āt-lān'tik*.  
Auburn, *ā'būrn*.  
Auckland, *āk'lānd*.  
Augusta, *ā-gū'sta*.  
Aurora, *ā-rō'ra*.  
Au Sable, *ā-sā'bl*.  
Austin, *ās'tīn*.  
Australia, *ās-trā'lī-a*.  
Austria, *ās'tri-a*.  
Avon, *ā'von*.  
Azov, *ā-zōv'*.  
Azores, *ā-zōrz'*.  
  
Bahama, *ba-hā'ma*.  
Bahia, *bā-ē-ā*.  
Baikal, *bī'kāl*.  
Baku, *bā-kōō'*.  
Balayan, *bā-lā-yān*.  
Balearic, *bāl-e-ār'ik*.  
Belize, *bā-lēz'*.  
Balkan, *bāl-kān'*.  
Bulkash, *bāl-kāsh'*.  
Baltic, *bāl'tik*.  
Baltimore, *bāl'tī-mor* or *mōr*.  
Baluchistan, *bā-lōō-chīa-tān'*.  
Banca, *bāp'ka*.  
Bangkok, *bāp'kōk'*.  
Bangor, *bāng'gōr*.  
Barcelona, *bār-se-lō'nā*.  
Basel, *bā'zel*.  
Basque, *bāsk*.  
Batangas, *bā-tān'gās*.  
Batavia, *bā-tā-vī-ā*.  
Baton Rouge, *bāt-ūn rōōzh'*.  
Bayonne, *bā-yōn'*.  
Bayou, *bīōō*.  
Beatrice, *bē-a-trē-a*.  
Beaufort, *bōfōrt* (N. C.) or *bū-fōrt* (S. C.).  
Bechuanaland, *bēk-ū-ān'a-lānd*.  
Bedouin, *bēd'ōō-ēn*.  
Belfast, *bēl'fāst* (Me.) or *bēl-fāst'* (Ireland).  
Belgium, *bēl'jī-ūm*.  
Belgrade, *bēl'grād'*.  
Bellaire, *bēl-ār'*.  
Belle Isle, *bēl'ī'*.  
Benares, *bēn-ār-rēz*.  
Bengal, *bēn-gāl'*.  
Benguela, *bēn-gā'lā*.  
Ben-Lomond, *bēn-lō'mōnd*.  
Ben-Nevis, *bēn-nēv'īs*.  
Benue, *bēn-ōō-ē'*.  
Berber, *bēr'ber*.  
Bering, *bēr'ing*.  
Berlin, *bēr'līn* or *Ger. bēr-lēn'*.  
Bermuda, *ber-mū'da*.  
Bern, *bēr'n*.  
Bethlehem, *bēth'le-hēm*.  
Bhutan, *bōō-tān'*.  
Biddeford, *bīd'e-fōrd*.  
Binghamton, *bīng'am-ton*.  
Birkenhead, *bēr'ken-hēd*.  
Birmingham, *bēr'mīng-ūm*.  
Biscay, *bīs'kā*.  
Blainiere, *bīn'ār-ik*.  
Bloemfontein, *bīōm-fōn'tēn*.  
Bogotá, *bō-gō-tā'*.

Böhmervald, *bō'mer-vālt*.  
Boisé, *boī-zā'*.  
Bokhara, *bōk-ār-ā*.  
Bolán, *bō-lān*.  
Bolivia, *bo-līv'ī-a*.  
Bologna, *bō-lōn'yā*.  
Boma, *bō'mā*.  
Bombay, *bōm-bā'*.  
Boothia, *bōō'thī-a*.  
Bordeaux, *bōr-dō'*.  
Borneo, *bōr-nē-ō*.  
Bośnia, *bōs'nī-ā*.  
Bosporus, *bōs-pō-rūs*.  
Bothnia, *bōth'nī-a*.  
Brahma, *brā'ma*.  
Brahmaputra, *brā-ma-pōō'tra*.  
Brazil, *brā-zīl'*.  
Brazos, *brā-zōs*.  
Bremen, *brā'mēn*.  
Breslau, *brēs'low*.  
Brest, *brēst*.  
Brindisi, *brēn'dē-sē*.  
Brisbane, *brīs'bān*.  
Brooklyn, *brook'līn*.  
Brunswick, *brūnz'wik*.  
Brussels, *brūs'sels*.  
Bucharest, *bū-ka-rēst'*.  
Budapest, *bōō'da-pēst*.  
Buddha, *bōō'da*.  
Buenos Ayres, *bō'nūs ā'riz* or *Sp. bō'nōs'ī-rēs*.  
Bulgaria, *bōōl-gār't-a*.  
Burlington, *būr'līng-ton*.  
Burma, *būr'mā*.  
Butte, *būt*.  
  
Cagayan, *kā-gī-ān'*.  
Cairo, *kār'ō* (U. S.); *kī'rō* (Egypt).  
Calais, *kāl'is* (U. S.); *kā-lā'* (France).  
Calcutta, *kāl-kūt'tā*.  
Caledonia, *kāl-e-dō'nī-a*.  
California, *kāl-ī-fōr'nī-a*.  
Cailao, *kāl-lā'ō*.  
Cambodia, *kām-bō-de-a*.  
Cambrian, *kām'bri-an*.  
Cambridge, *kām'brīj*.  
Campêche, *kām-pā'chā*.  
Campos, *kām-pōs*.  
Canada, *kān'a-dā*.  
Canadian, *kā-nā-de-an*.  
Canary, *kā-nārī*.  
Candia, *kān-de-ā*.  
Cantabrian, *kān-tā'bri-an*.  
Canton, *kān'ton* (U. S.); *kān-tōn* (China).  
Cape Breton, *brēt'on*.  
Caracas, *kā-rā-kās*.  
Cardiff, *kār'dīf*.  
Cardigan, *kār-dē-gan*.  
Caribbean, *kār-īb-bē-an*.  
Carolina, *kār-ō-lī'na*.  
Carpathian, *kār-pā'thī-an*.  
Carpentaria, *kār-pēn-tā're-a*.  
Cartagena, *kār-tā-jē'na*.  
Cascade, *kās-kād'*.  
Caspian, *kās'pi-an*.  
Cassiquari, *kā-sē-kē-ārē*.  
Catoche, *kā-tō'hā*.  
Caucasian, *kā-kā'shān*.  
Caucasus, *kā-kā-sūs*.  
Cavite, *kā-vē-tā'*.  
Cayenne, *kā-yēn'*.  
Celebes, *sē-lē-bēz*.  
Cenis, *sē-nē'*.  
Cettinje, *chā-tēn'yā*.  
Cévennes, *sā-vēnn'*.  
Ceylon, *sē-lōn'*.  
Champlain, *shām-plān'*.  
Chapala, *shā-pā'lā*.

Charlotte, shàr'lót.  
 Chatham, chát'am.  
 Chattanooga, chát-ta-hó/chá.  
 Chattanooga, chát-tà-nó/ga.  
 Chautauqua, cha-tà'kwa.  
 Chelsea, ché'lé.  
 Chennitz, kén'nítz.  
 Cherbourg, shér'búrg.  
 Chesapeake, chés'a-pék.  
 Chesuncook, ché-sún'kóok.  
 Cheviot, chí'v-ót.  
 Cheyenne, shí-én.  
 Chicago, she-ká'gó.  
 Chihuahua, ché-wá'wá.  
 Chile, ché'lá.  
 Chillicothe, chí-lí-kóth'e.  
 Chimboraço, chí-m-bó-rá'zò.  
 Chinese, chí'né.  
 Christiania, kris-té-k'né-a.  
 Cienfuegos, sé-én'fwá'gò.  
 Cinchona, sín-kó'na.  
 Cincinnati, sín-sín-ná'tí.  
 Clyde, klí'd.  
 Cochín China, kó'chín chí'na.  
 Coeur d'Alene, kúr dá-lán'.  
 Cohoes, kó-hó.  
 Colima, kó-lé'má.  
 Cologne, kó-lón'.  
 Colombia, kó-lóm'bé-a.  
 Colorado, kó-ló-rá'dó.  
 Como, kó'mó.  
 Concepcion, kon-sép'shún.  
 Concord, kón'kúrd.  
 Connecticut, kón-nét'í-kút.  
 Constance, kón'stans.  
 Constantinople, kón-stán'tí-nó'pl.  
 Coosa, kó'sa.  
 Copenhagen, kóp'en-há'gen.  
 Cordova, kór-dó-vá.  
 Corinth, kór'ínth.  
 Corpus Christi, kór'pús kris'tá.  
 Corrientes, kór-rén'tés.  
 Corsica, kór-sí-ka.  
 Costa Rica, kós'tá rí'ká.  
 Cotopaxi, kó-tó-pák'sé.  
 Covington, kúv'íng-ton.  
 Cracow, krá'kó.  
 Croydon, kroy'don.  
 Cuba, kú'ba.  
 Culloden, kúl-ló'den.  
 Cumberland, kúm'bri-an.  
 Curaçao, kú-ra-só.  
 Cuzco, kó'sá'kó.  
 Cyprus, sí'prás.

Dahomey, dá-hó'má.  
 Dakota, dá-kó'ta.  
 Dalia, dá'lá.  
 Dumasqua, dá-má'skú.  
 Dantzic, dán'tsík.  
 Danube, dán'úb.  
 Dardanelles, dár-da-néls'.  
 Darfur, dár'fúr.  
 Darien, dá're-én.  
 Dartmouth, dárt'en-pórt.  
 Decatur, dé-ká'túr.  
 Delaware, dé'lá-wár.  
 Delhi, India, dé'lí.  
 Des Moines, de moin'.  
 Des Plaines, dá plán'.  
 Detroit, de-troit'.  
 Dnieper, né'per.  
 Dunester, né's'ter.  
 Dominica, dóm-e-né'ka.  
 Donegal, dón-e-gal'.  
 Dorefield, dó-vre-fyél'd'.  
 Drave, dráv.  
 Dresden, drés'den.  
 Dubuque, dóo-búk'.  
 Duluth, dú-lóuth'.  
 Dundee, dún-dé'.  
 Dunedin, dún-ed'in.  
 Durango, dóo-rán'gó.  
 Dwina, dwé'na.

Eau Claire, ó klár'.  
 Ebro, é'bró.  
 Ecuador, ék-wá-dór'.  
 Edinburgh, éd'in-búr-ó.  
 Egypt, é'jípt.  
 Egyptian, é-jíp'shan.  
 Elba, é'l'ba.  
 Elbe, é'l'be.  
 Elbruz, éi-bró'z.  
 Elburz, éi-bó'z.  
 Elgin, é'l'jín.  
 Elmira, éi-mí'ra.

El Paso, éi pá'só.  
 Erne, érn.  
 Erria, é'r'ria.  
 Err, é'ria.  
 Etna, é't'na.  
 Euboea, ú-bé'a.  
 Euphrates, ú-frá'tés.  
 Eurasia, ú-rá'shi-a.  
 European, ú-ró-pé'an.  
 Evansville, év'ana-víl.  
 Everest, éver-ést.  
 Eyre, ár.

Falkland, fák'land.  
 Fezzan, fés-zán'.  
 Fiji, fé'jé.  
 Findlay, fínd'lá.  
 Finland, fín'land.  
 Fiord, fyórd.  
 Firth, fért'h.  
 Flamborough, flám'búr-ró.  
 Florida, flór'l-da.  
 Fond du Lac, fón dú lak'.  
 Formosa, fór-mó'sá.  
 Fort Wayne, wán.  
 Frankfurt, fránk'fórt.  
 Fraser, frá'zer.  
 Fremont, frémónt'.  
 Fresno, frés'nó.  
 Fugian, fú-é'j-an.  
 Fusiyama, fú-sí-k'má.  
 Galapagos, gá-láp's-gò.  
 Galilee, gál'lí.  
 Galveston, gál'ves-ton.  
 Galway, gál'wá.  
 Ganges, gán'jés.  
 Garonne, gá-rónn'.  
 Gasconade, gá-kó-nád'.  
 Genesee, jén-e-sé'.  
 Geneva, je-né'va.  
 Genoa, jén'o-a.  
 Georgia, jór'jí-a.  
 Geral, há-rál'.  
 Gettysburg, gét'is-búrg.  
 Ghata, gá'ta.  
 Ghent, gént.  
 Gibraltar, jí-brá'tar.  
 Gila, bí'lá.  
 Gironde, zhé-rónd'.  
 Glasgow, glás'gó.  
 Gloucester, gló's'ter.  
 Gloversville, gló'vers-víl.  
 Gobi, gó'bé.  
 Gondar, gón'dár.  
 Gracias a Dios, grá'sé-ás á d'ós.  
 Grampian, grám'pi-an.  
 Greenwich, grén'wích (U. S.); grén'j (Eng.).  
 Grinnell, grín-él'.  
 Guadalupe, gwá-dá-lú-há'rá.  
 Guadalupe, gwá-dá-lú-hé-vér'.  
 Guadalupe, gwá-dá-lóop' (U. S.); gwá-dá-lóop' (Spanish).  
 Guano, gwa-ná'kó.  
 Guanajuato, gwá-ná-hwá'tó.  
 Guatemala, gwá-tá-má'tá.  
 Guayaquil, gwí-á-ké'l'.  
 Guiana, gé-á-ná.  
 Guinea, gín'é.  
 Guthrie, gúth're.

Hainan, hí-nán'.  
 Haiti, há'tí.  
 Hakodate, há-kó-dá'tá.  
 Halifax, há'l'e-fáks.  
 Hamite, há'mít.  
 Hanover, hán-ó-ver.  
 Hatteras, hát'ter-as.  
 Havana, ha-ván'a.  
 Havre, há-ver.  
 Hawaii, há-wí'é.  
 Hebrides, héb'ri-dés.  
 Hecla, hék'lá.  
 Helena, hél'e-na.  
 Heligoland, hél'gó-lánd.  
 Henlopen, hén-ló'pen.  
 Herat, her-át'.  
 Himalaya, him-á'lá-ya.  
 Hindu-Kush, hínd'kósh.  
 Hindustan, hínd-ó-stán'.  
 Hoang, hó-áng'.  
 Hoboken, hó'bó-ken.  
 Holyoke, hó'l'yók.  
 Hondo, hón-dó.  
 Honduras, hón-dó'ras.  
 Hongkong, hóng-kóng.

Honolulu, hó-nó-lóo'ló.  
 Huacac, hó'sak.  
 Housatonic, hó-sa-tón'ic.  
 Houston, hús'ton.  
 Hudson, húd'son.  
 Hué, hó-é'.  
 Humboldt, hám'bólt.  
 Hungary, hún'ga-ri.  
 Huron, hú'ron.

Iberian, í-bé're-an.  
 Idaho, í-da-hó.  
 Illimani, éi-yé-má'né.  
 Illinois, íl-lí-nó'l' or -noir'.  
 Iloilo, é-ló-é'ló.  
 India, ín'dí-a.  
 Indiana, ín-dí-án'a.  
 Indianapolis, ín-dí-án-áp'o-lis.  
 India, ín'dés.  
 Indus, ín'dús.  
 Innsbruck, íns'brook.  
 Inverness, ín-ver-nés'.  
 Ionian, í-óní-an.  
 Iowa, íó-wá.  
 Iquique, é-ké'ká.  
 Iran, é-rán'.  
 Irtutak, ír-kóotak'.  
 Isle Royale, éi rwá-yal'.  
 Italian, í-tál'yan.  
 Itasca, í-tá'ska.  
 Ithaca, íth'a-ká.

Jamaica, ja-má'ka.  
 Japan, ja-pán'.  
 Jassy, já'sé.  
 Java, já'vá.  
 Jersey, jér'sí.  
 Johannesburg, jó-hán'nes-búrg.  
 Joliet, jó'le-ét.  
 Juan de Fuca, hóo-án' dá fú'ka.  
 Juan Fernandez, fér-nán'désh.  
 Juneau, jún-ó'.  
 Jungfrau, jóng'frow.  
 Junata, jú-ní-át'a.  
 Jura, jú'ra.

Kábul, ká'búl.  
 Kadiak, ká'd-yak'.  
 Kafir, ká'fír.  
 Kalahari, ká-lá-há'ri.  
 Kama, ká'má.  
 Kamchatka, kám-chát'ka.  
 Kamerun, ká-ná-í-dóu'.  
 Kanawha, ká-ná'wá.  
 Kankakee, kán-ka-ké'.  
 Kansas, kán'sas.  
 Kara, ká'rá.  
 Karakorum, ká-rá-kó-rúma.  
 Kashgar, kash-gár'.  
 Kashmir, kash-mér'.  
 Kaskaskia, kás-ká'skí-a.  
 Katahdin, ká-tá'dín.  
 Kauai, kow-í-é.  
 Kenia, ká-né-á.  
 Kennebec, kén-e-l'ék'.  
 Kentucky, kén-tú'kí.  
 Keokuk, ké-ó-kúk.  
 Khaliar, ká-lá-ár.  
 Khartum, kár-tóom'.  
 Khelat, kel-át'.  
 Khin-ghan, kín-gán'.  
 Khiva, ké'vá.  
 Khyber, kí'bér.  
 Kiakhta, ké-ák'tá.  
 Kilauca, ké-ló-wá's.  
 Killmanjaro, kí-lé-mán-já-ró'.  
 Killarney, kí-lá-rí-ní.  
 Kiolen, kí-ó-lén.  
 Kioto, ké-ó-tó.  
 Kirghiz, kí-réz'.  
 Klamath, klá'math.  
 Klausenburg, klów'en-búrg.  
 Knoxville, nóks'víl.  
 Kongo, kóng'gó.  
 Königberg, kóníge-bérg.  
 Koran, kó-rán.  
 Kordofan, kór-dó-fán'.  
 Korea, kó-ré'a.  
 Kronstadt, krón'étát'.  
 Kueulun, kwén-lóon'.

Labrador, láb-ra-dór'.  
 Lachine, lá-shén'.  
 Lacrosse, lá-kró's.  
 Ladoga, lád'ó-ga.  
 Ladrones, lá-drón's.  
 Lafayette, lá-fá-ét'.  
 Lagoon, lá-góon'.

La Guaira, lá gwí'rá.  
 Lancaster, láng'as-ter.  
 Landea, lánd.  
 Lansing, láns'ing.  
 La Paz, lá páth'.  
 La Plata, lá plá'tá.  
 Laporte, lá-pórt'.  
 Laramie, lá-rá-mé.  
 Lasalle, lá-sál'.  
 Lassa, lá-sá.  
 Las Vegas, lás vā'gás.  
 Laurentian, lá-rén'áhe-an.  
 Lausanne, lá-sau'.  
 Leadville, léd'vil.  
 Leavenworth, lēv'en-worth.  
 Leghorn, lég'hörn.  
 Leicester, lēs'ter.  
 Leipsic, lēp'sik.  
 Leith, lēth.  
 Lemberg, lēm'bērg.  
 Leon, lē-ōn' (Sp.).  
 Leone, lē-ō-né.  
 Lexington, lēk'sing-ton.  
 Liberia, lib'ē-ri-á.  
 Libyan, lib'e-an.  
 Liège, lē-āsh'.  
 Lille, lēl.  
 Lima, lí'má (U. S.); lē'má (Peru).  
 Lingayen, lén-gā-yén'.  
 Lipari, líp'a-rá.  
 Lisbon, lís'bon.  
 Lisburn, lísb'urn.  
 Liverpool, lív'er-póol.  
 Llano Estacado, lyā'nó ts-tá-ká'dó.  
 Loanda, ló-án'dá.  
 Loch, lók.  
 Loosa, lēa.  
 Lofoden, ló-fó'den.  
 Loire, lwár.  
 Lombok, lóm-bók'.  
 Londonderry, lún'dún-dér-l.  
 Los Angeles, lós áng'el-sá.  
 Lough Neagh, lóh ná'.  
 Louisiana, lóo-sé-á'na.  
 Louisville, lóo'is- or lóo'tí-vil.  
 Lucerne, lóo-sérú'.  
 Luray, lú-rá'.  
 Luxemburg, lúks'ém-búrg.  
 Luxon, lóo-són'.  
 Lyons, lí-ōnz.  
 Macao, má-ká'ó.  
 Macassar, má-kas'sar.  
 Mackenzie, má-kén'si.  
 Mackinac, mák'ín-á.  
 Macon, má'kun.  
 Madagascar, mád-a-gás'kar.  
 Madeira, má-dé-ra.  
 Madras, má-drás'.  
 Madrid, mád'ríd (U. S.); má-drid' (Spain).  
 Maelstrom, má'l'strém.  
 Magdalená, mag-dá-lá'ná.  
 Magdeburg, mag-de-búrg.  
 Magellan, má-jel'an.  
 Maine, máin.  
 Malacca, má-lák'a.  
 Managua, má-ná'gwá.  
 Manchester, mán'ches-ter.  
 Manchuria, mán-chó'ré-a.  
 Mandalay, man'dá-lá.  
 Manila, má-níl'a.  
 Manistee, man-is-tē.  
 Manitoba, máin-tó-bá'.  
 Manitou, máin-tó.  
 Manzanillo, mán-tha-nēl'yó.  
 Maori, má'ó-ré.  
 Maracaibo, má-rá-kí'bó.  
 Marañón, má-rán'yón.  
 Marmora, má-rmó-ra.  
 Marseilles, má-rsálz'.  
 Martinique, má-r-tí-nék'.  
 Maskat, má-s-kát.  
 Massachusetts, má-sa-chú'sets.  
 Massaua, má-sow'a.  
 Massillon, má-síl-on.  
 Matagorda, má-t-a-gór'da.  
 Matamoros, má-t-a-mó'ros.  
 Matanzas, má-tán'zas.  
 Matapan, má-tá-pán' (Gr.).  
 Maui, mów'é.  
 Mauna Kea, mów-ná ká'a.  
 Mauna Loa, ló'a.  
 Mauritius, má-rish'i-tú.  
 Maatlan, má-sát-lán'.  
 Mediterranean, méd-i-ter-rá-ne-an.  
 Mekong, má-kóng'.

Melbourne, mēl'búrn.  
 Memphremagog, mēm-fre-má'góg.  
 Memphis, mēm'fis.  
 Menai, mén'í.  
 Mendocino, mēn-dó-sē'nó.  
 Meramec, mē-rá-mēk.  
 Meriden, mēr'i-dén.  
 Merrimac, mēr't-mak.  
 Mersey, mēr'si.  
 Messina, mēs-sē'ná.  
 Mexico, mēks'i-kó.  
 Miami, mí-ám'í.  
 Michigan, mísh'i-gan.  
 Micronesia, mí-kro-nē'shi-a.  
 Milan, mí-lán or mí-lán'.  
 Milo, mē'ló (Greece).  
 Milwaukee, míl-wá'ké.  
 Mindanao, mēn-dá-ná'ó.  
 Minneapolis, mín-e-áp'ó-lis.  
 Minnesota, mín-e-só'ta.  
 Mississippi, mís-is-íp'í.  
 Missouri, mís-ó'ri.  
 Mobile, mó-bél'.  
 Mohammed, mó-hám'méd.  
 Mohave, mó-há-vá.  
 Mohawk, mó'hák.  
 Molokai, mó-ló-kí'.  
 Moluccas, mó-lúk'kas.  
 Mombasa, móm-bás'a.  
 Monaco, món'-á-kó.  
 Mongolia, món-gó'lí-a.  
 Monongahela, mó-nón-gá-hé'la.  
 Mouravia, món-ró-vi-a.  
 Montana, món-tá'na.  
 Montauk, món-ták'.  
 Mont Blanc, món blón' or mount blánk.  
 Mont Cenis, món' se-né or mount.  
 Montenegro, món-tá-ná'gró.  
 Monterey, món-te-rá'.  
 Montevideo, món-té-ví'dé-ó.  
 Montgomery, mōnt-gúm'er-l.  
 Monticello, món-té-sél'lo.  
 Montpellier, mōnt-pé'lí-er.  
 Montreal, mōnt-ro-ál'.  
 Moravia, mó-rá-vi-a.  
 Moray, mór'a.  
 Morocco, mó-rók'ó.  
 Moscow, mó'skó.  
 Mount Diablo, dé-á-bló.  
 Mount Lyell, lí-él.  
 Mount St. Elias, e-lí-as.  
 Mount Tyndall, tín'dál.  
 Mozambique, mó-zám-bák'.  
 Mukden, móok-dén'.  
 Munich, mú'ník.  
 Murray, mú'rú.  
 Muakataine, mús-ka-tén'.  
 Muakegon, mús-ké'gon.  
 Nan-ling, nán'ling.  
 Nantes, nánta.  
 Nantucket, nán-ták'et.  
 Naples, ná-plá.  
 Narragansett, nár-ra-gán'set.  
 Naahua, násh'ú-a.  
 Nassau, ná'sá.  
 Natchez, ná'chez.  
 Navajo, ná-vá-hó.  
 Nebraska, ne-brás'ka.  
 Neches, nēch'ez.  
 Negritoe, né-grí-tóe.  
 Nepal, ná-pál'.  
 Netherlands, nēth'er-landz.  
 Neuse, nús.  
 Nevada, ne-vá'da.  
 Newark, nár'k.  
 Newfoundland, nú'fond-land.  
 New Hampshire, hámp'shír.  
 New Orleans, ór'lo-anz.  
 Newport, nú'pórt.  
 New Zealand, zé'land.  
 Niagara, ní-ág'a-ra.  
 Nicaragua, né-ká-rá'gwá.  
 Nice, nés.  
 Niger, ní-jer.  
 Ningpo, níng-pó'.  
 Nipigon, níp'i-gón.  
 Norfolk, nórfók.  
 Norwegian, úor-wé'ji-an.  
 Norwich, úor-wích (U. S.); nórr'í (Eng.).  
 Nottingham, nótt'ing-am.  
 Nova Scotia, nó'va skó'shi-a.  
 Nova Zembla, nó'va zém'blá.  
 Nubia, nú'bí-a.  
 Nueces, nú'sés.

Nuevitas, nwa-vá-tas.  
 Nuremberg, nú'rēm-bérg.  
 Nyauza, ní-án'za.  
 Nyassa, né-ás'sá.  
 Oahu, ó-á'hó.  
 Oakland, ók'land.  
 Obi, ó-bé.  
 Ocmulgee, ók-múl'gē.  
 Oder, ó'der.  
 Odessa, ó-dés'sa.  
 Ogden, óg'dén.  
 Ojuechee, ó-gé'ché.  
 Okanagan, ó-kán'a-gan.  
 Okchobee, ó-ké-chó'bé.  
 Okfuskeke, ó-ké-fí-nó'ka.  
 Okhotak, ó-kótsák'.  
 Oklahoma, ók-lá-hó'ma.  
 Oldham, óld'am.  
 Olympia, ó-lím'pí-a.  
 Olympus, ó-lím'pús.  
 Omaha, ó'ma-há.  
 Oman, ó-mán'.  
 Onak, ónak.  
 Onega, ó-né'ga.  
 Onida, ó-ní'da.  
 Ontario, ón-tá'ri-ó.  
 Oregon, ór'e-gón.  
 Orinoco, ó-ri-nó'kó.  
 Orizaba, ó-ré-thá-bá.  
 Orkney, órk'né.  
 Osage, ó-sáj'.  
 Oshkosh, ósh'kósh.  
 Oswego, ós-wé'gó.  
 Otranto, ó-trán'tó.  
 Ottawa, ó'tá-wa.  
 Ottumwa, ót-túm'wa.  
 Ouse, óús.  
 Ozark, ó-zárk'.  
 Pacific, pá-síf'ík.  
 Paducah, pá-dú'ka.  
 Pagan, pá-gan.  
 Pago, pá'gó.  
 Palawan, pá-lá-wán'.  
 Palermo, pá-lér'mó.  
 Palestine, pá-lés'tín.  
 Pamir, pá-mér'.  
 Pamlico, páml'i-kó.  
 Pampas, pámp'pá.  
 Panama, pá-ná-má'.  
 Papua, páp'ú-a.  
 Pará, pá-rá'.  
 Paraguay, pá-rá-gwí'.  
 Paramaribo, pá-rá-már't-bó.  
 Parana, pá-rá-ná'.  
 Paris, pá-rí-a.  
 Parthenon, pár'thé-nón.  
 Pascagoula, pás-ka-gó'la.  
 Passaic, pás-sá'ík.  
 Passamaquoddy, pás-a-má-kwó'dí.  
 Patagonia, pá-t-a-gó'ní-a.  
 Paterson, pá'ter-són.  
 Pawtucket, pá-ták'et.  
 Pedee, pé-dé.  
 Peking, pé-king'.  
 Pelling, pé-ling'.  
 Pennine, pén'nín.  
 Pennsylvania, pén-sil-vá'ní-a.  
 Penobscot, pé-nób'scót.  
 Pensacola, pén-sa-kó'la.  
 Peoria, pé-ó-ri-a.  
 Pernambuco, pér-nám-bó'kó.  
 Persia, pér'shi-a.  
 Perth, pér'th.  
 Peru, pé-rú.  
 Phenix, fé'níks.  
 Philadelphia, fil-a-dél'fí-a.  
 Philippine, ní'p-lín.  
 Piedmont, pé'd'mónt.  
 Pierre, pér.  
 Pietermaritzburg, pé-ter-már'íta-búrg.  
 Pindus, pín'dús.  
 Pinos, pé'nós.  
 Piraens, pí-ré'ús.  
 Pittsburg, píts'búrg.  
 Platte, plát.  
 Plymouth, plím'úth.  
 Pompeii, póm-pá'yé.  
 Pontchartrain, pónt-char-trán'.  
 Popocatepetl, pó-pó-kát-s-pá-tí.  
 Port au Prince, pórt ó prins'.  
 Porto Rico, pórtó ré'kó.  
 Port Said, sá-éd'.  
 Portsmouth, pórts'múth.  
 Portugal, pórtú-gal.

Portuguese, pŏr'tū-gēs.  
 Potomac, pŏ-tŏ'mak.  
 Potosi, pŏ-tŏ'si.  
 Poughkeepsie, pŏ-ki'p'si.  
 Prague, præg.  
 Pressburg, prēs-boorg.  
 Pretoria, prē-tŏr'ē-a.  
 Pribilof, prē-bē-lŏv'.  
 Providence, prŏv'i-dēna.  
 Prussia, prūs'i-ya.  
 Pruth, prŏŭth.  
 Puebla, pwēh'la.  
 Pueblo, pwēb'lŏ.  
 Puerto Principe, pwēr'tŏ prān'sē-pā.  
 Puget, pū'jet.  
 Pyreneas, pir'e-nēz.  
 Quebec, kwe bēk'.  
 Querétaro, kā-rā'tŏ-rŏ.  
 Quincy, kwīn'si.  
 Quito, kē'tŏ.  
 Racine, ra-sēn'.  
 Rainier, rā'nēr.  
 Raleigh, rā'la.  
 Rappahannock, rap-a-hān'ok.  
 Ravenna, ra-vēn'a.  
 Reading, rēd'ing.  
 Rheims, rēmz.  
 Rhine, rin.  
 Rhone, rŏn.  
 Riga, rī'ga (U. S.); rē'gā (Rus.).  
 Rio Grande, rē'ŏ grān'dā.  
 Rio Janeiro, zhi-nā'ē-rŏ.  
 Rio Negro, nā'grŏ.  
 Roanoke, rŏ-a-nŏk'.  
 Rochelle, rŏ-shēl'.  
 Rochester, rŏch-ester.  
 Romanzof, rŏ-mān'tŏf.  
 Rosario, rŏ-sā-rŏ-ŏ.  
 Rotterdam, rŏt'er-dām.  
 Rouen, rŏŏ-n'.  
 Roumelia, rŏŏ-nē'le-a.  
 Roumania, rŏŏ-mā'nī-a.  
 Russia, rūsh'a.  
 Saco, sākŏ.  
 Sacramento, sāk-ra-mēn'tŏ.  
 Saginaw, sāk'i-nā.  
 Sahara, sā-hā-mā.  
 Sahara, sā-hā-mā.  
 Saigon, sāk'gŏn.  
 Saint Albans, sānt al'banz.  
 Saint Augustine, sāk'gūs-tēn.  
 Saint Clair, klār.  
 Saint Croix, krŏi'.  
 Saint Gothard, gŏ-tārd'.  
 Saint Helena, sānt he-lēna.  
 Saint Lawrence, sānt la'rēna.  
 Saint Louis, lŏŏ's or lŏŏ'l.  
 Saint Petersburg, pē'ters-bŭrg.  
 Saint Roque, rŏk.  
 Saint Sophia, sŏ-fē'a.  
 Sakhalin, sāk-khā-lēn'.  
 Salem, sāl'em.  
 Salford, sāl'ford.  
 Salisbury, sāl'ster-i.  
 Salonika, sāl-lŏ-nē'kū.  
 Salvador, sāl-vā-dŏr'.  
 Salzburg, sālts-bŏŏrg.  
 Samarkand, sām-ar-kānd'.  
 Samoa, sāmŏ'a.  
 San Antonio, san ān-tŏn'i-ŏ.  
 San Bernardino, bēr-nār-dē'nŏ.  
 San Diego, sām dē-ā'gŏ.  
 Sandusky, sām-dŏs'ki.  
 San Francisco, frān-sis'kŏ.  
 San Joaquin, sām hŏ-ā-kēn'.  
 San José, hŏ-sā'.  
 San Juan, hŏŏ-ān'.  
 San Lucas, lŏŏ'kas.  
 San Luis, lŏŏ-ēs'.  
 San Marino, mār-rē'nŏ.  
 San Pablo, pā'blŏ.  
 Santa Barbara, sān'ta bār'ba-ra.  
 Santa Fé, fā.  
 Santee, sān'tē'.  
 Santiago, sān-tē-ā'gŏ.  
 Santo Domingo, sāntŏ dŏ-mēn'gŏ.  
 Santos, sāntŏs.  
 Saône, sŏn.  
 Saratoga, sār-a-tŏ'ga.  
 Sardinia, sār-dīn'i-a.  
 Saskatchewan, sāk-kāch'e-wān.  
 Sault Sainte Marie, sŏŏ sēnt mār'i.  
 Savannah, sa-vān'a.  
 Save, sāv.  
 Scandinavia, skān-dī-nā'vī-a.

Schenectady, sŏk-nēk'tā-dē.  
 Schuylkill, skŏŏ'ki'l.  
 Scotland, skŏt'land.  
 Scranton, skrān'tŏn.  
 Seattle, sē-āt'l.  
 Seine, sēn.  
 Seminole, sēm't-nŏl.  
 Semitic, sēm-it'ic.  
 Seneca, sēn'e-ka.  
 Senegal, sēn-e-gāl'.  
 Senegambia, sēn-e-gām'bi-a.  
 Seoul, sē-ŏŏl'.  
 Servia, sēr'vī-a.  
 Severn, sēr'vern.  
 Shamokin, shā-mŏ'kin.  
 Shanghai, shāng-hā'l.  
 Shannon, shān'on.  
 Shasta, shās'ta.  
 Sheboygan, she-boi'gan.  
 Sheffield, shēf'fēld.  
 Shenandoah, shēn-ān-dŏ'a.  
 Shoshone, shŏ-shŏ'nē.  
 Shreveport, shrēv'pŏrt.  
 Siam, si-ām'.  
 Siberia, si-bēr'i-a.  
 Sicily, si-ŏ-lī.  
 Sierra Madre, sē-ēr'a mār'drā.  
 Singapore, sin-gā-pŏr'.  
 Sioux, sŏŏ.  
 Sitka, sit'ka.  
 Smyrna, smēr'na.  
 Snowdon, snŏ'dŏn.  
 Sofia, sŏ-fē'a.  
 Sokoto, sŏ-kŏ-tŏ'.  
 Solway, sŏl'wā.  
 Somali, sŏ-mā'lē.  
 Somerville, sŏm'er-vil.  
 Sparta, spār'tā-vēn'tŏ.  
 Spokane, spŏ-kān'.  
 Stanovoi, stā-nŏ-vŏl'.  
 Stettin, stēt'tēn.  
 Steubenville, stŭ-ben-vil.  
 Stirling, stēr'ling.  
 Stockholm, stŏk'hŏlm.  
 Strasburg, strās'bŭrg.  
 Stuttgart, stŏt'gŭrt.  
 Sucre, sŏŏ'kre.  
 Sudan, sŏŏ-dān'.  
 Suez, sŏŏ-ēz.  
 Suliman, sŏŏ-lē-mān'.  
 Sumatra, sŏŏ-mā'trā.  
 Sunda, sŏn'da.  
 Sunderland, sŏn'der-land.  
 Susquehanna, sŏs-kwe-hān'a.  
 Suwannee, sŭ-wā'nē.  
 Swansea, swŏn'sē.  
 Sweden, swē'den.  
 Switzerland, swit'ser-land.  
 Sydney, sid'nī.  
 Syracuse, sir'a-kŭs.  
 Syria, sir'i-a.  
 Tabriz, tā-brēz'.  
 Tacoma, tā-kŏ'mā.  
 Tagus, tā'gŭs.  
 Tahoe, tā'hŏ'.  
 Tahlequah, tā'lŏ-kwā.  
 Tallahassee, tāl-a-hās'ē.  
 Tampa, tāmp'a.  
 Tampico, tāmp-pē'kŏ.  
 Tananarivo, tā-nā'nā-rē-vŏ.  
 Tanganyika, tān-gān-yē'kū.  
 Taranito, tā-rān'tŏ.  
 Tasmania, tās-mā'nī-a.  
 Taunton, tān'tŏn.  
 Taurus, tā'rŭs.  
 Tchad, chād.  
 Tegucigalpa, tā-gŏŏ-sē-gāl'pā.  
 Teheran, te-hērān'.  
 Tehuantepec, tā-wān-tā-pēk'.  
 Tennessee, tēn-nes-sē'.  
 Terre Haute, tēr-e hŏt'.  
 Texas, tēks'as.  
 Thamez, thāms (U. S.); tēms (Eng.).  
 Theiss, tŭs.  
 Thian-Shan, tē-ān'shān.  
 Tiber, tī'ber.  
 Tibet, tī-bēt' or tīb'ēt.  
 Tien-tsin, tē-ēn'tsēn.  
 Tierra del Fuego, tē-ēr'rā dēl fwā'gŏ.  
 Tiflis, tīf-lēs'.  
 Tigris, tī'grīs.  
 Timbaktu, tim-bŏŏk'tŏŏ.  
 Timor, tē-mŏr'.  
 Titicaca, tīt-ē-kā'kū.  
 Tocantins, tŏ-kān-tēns'.  
 Tokyo, tŏ-kē-ŏ.

Toledo, tŏ-lē'dŏ.  
 Tollima, tŏ-lē'mā.  
 Tombigbee, tŏm-bīg'bē.  
 Topeka, tŏ-pē'ka.  
 Toronto, tŏ-rŏn'tŏ.  
 Toulon, tŏŏ'lŏn.  
 Toulouse, tŏŏ-lŏŏz'.  
 Traverse, trāv'era.  
 Trieste, trē-est'.  
 Trinidad, trin-i-dād'.  
 Tripoli, trīp'ŏ-lī.  
 Taetse, tset'sē.  
 Tucson, tŭ-sŏn'.  
 Tularé, tŏŏ-lā'rē.  
 Tunis, tŭ'nīs.  
 Turin, tŭ'rīn.  
 Turkistan, tŏŏr-kis-tān'.  
 Uinta, ū-in'tā.  
 Ujjji, ūŏ-jē'jē.  
 Ural, ū'rāl.  
 Uruguay, ūŏ-rŏŏ-gwī.  
 Utah, ū'tā or ū'tā.  
 Utica, ū'tī-ka.  
 Valda, vāl'dī.  
 Valencia, va-lēn'shī-a.  
 Valparaiso, vāl-pā-rī'sŏ.  
 Vancouver, vān-kŏŏ'vēr.  
 Venezuela, vēn-e-swē'la.  
 Venice, vēn'is.  
 Vera Cruz, vār'krŏŏz'.  
 Verde, vērd'.  
 Vermont, ver-mŏnt'.  
 Verona, ve-rŏna.  
 Vesuvius, vē-sŭ'vī-ŭs.  
 Verkoyansk, vēr-kŏ-yānsk'.  
 Victoria, vik-tŏrē-a.  
 Vienna, vi-ēn'a (U. S.); vē-ēr'a (Austria).  
 Vincennes, vin-sēnz'.  
 Virginia, ver-jīn'i-a.  
 Viatka, viātŭ-ka.  
 Vladivostok, vlā-dē-vŏs-tŏk'.  
 Volga, vŏlgā.  
 Voages, vŏzh.  
 Wabash, wā'bash.  
 Wachusett, wā-chŭ'set.  
 Waco, wākŏ.  
 Wadal, wād'l.  
 Wales, wālz.  
 Warsaw, wār'sā.  
 Wasatch, wā'sāch.  
 Waterloo, wā-ter-lŏŏ'.  
 Welland, wē'lānd.  
 Wellington, wēl'ing-tŏn.  
 Wener, wē'nēr.  
 Westminster, wēt'mīn-ster.  
 Wetter, wēt'tēr.  
 Wheeling, hwēl'ing.  
 Wichita, wīch'i-tā.  
 Wilkesbarre, wīlks'bār-i.  
 Willamette, wīl-a-mēt.  
 Wilmington, wīl-mīng-tŏn.  
 Winnebago, wīn-ē-lā'gŏ.  
 Winnemucca, wīn-ē mŭk'a.  
 Winnetka, wīn-ē-pē-sā'kū.  
 Winnipeg, wīn'i-pēg.  
 Winona, wī-nŏn'a.  
 Winooki, wī-nŏŏ'ki.  
 Wisconsin, wī-sŏn'sin.  
 Woonsocket, wŏŏn-sŏk'et.  
 Worcester, wŏŏ'tēr.  
 Wyoming, wī-ŏ-mīng.  
 Yablonoŭ, yā-blŏ-nŏi'.  
 Yadin, yād'kin.  
 Yakutsk, yā-kŏŏ'tak'.  
 Yang-tsi, yāng'tsē.  
 Yarkand, yār-kānd'.  
 Yazoo, yā-zŏŏ'.  
 Yencsi, yēn-ē-sā'ē.  
 Yesso, yēsŏ.  
 Yokohama, yŏ-kŏ-hā-mā.  
 Youkers, yŏk'ers.  
 Yosemite, yŏ-sēm'i-tē.  
 Yucatan, yŏŏ-kā-tān'.  
 Yukon, yŏŏ-kŏn.  
 Zacatecas, zāk-a-tā'kas.  
 Zambesi, zām-bē'sē.  
 Zanesville, zānz'vil.  
 Zante, zān'tā.  
 Zanzibar, zān'zi-bār.  
 Zululand, zŏŏ-lŏŏ-land.  
 Zurich, tsŭ'rik.  
 Zuyder Zee, zŏf'dēr zē'.













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